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## DISEASES OF THE STOMACH AND DUODENUM\*

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The subject I have chosen, diseases of the stomach and duodenum, is peculiarly appropriate for this occasion because of the part the donor of this lectureship has taken in the development of the surgical treatment of these diseases. And since it has been my good fortune that the donor has been my teacher, my remarks may be regarded as a reflection of his teaching.

Dyspepsia or indigestion is one of the most common and at the same time most important of the ailments of the human race. The condition is so common in this country that it has been called the great American disease. Probably the breakdown in the power of properly digesting food is due to the pace of modern living, improper food, irregular hours of eating, excessive use of highly concentrated food, and lack of leisure. The stress of modern life is such that there is a tendency to forget the importance of the old adage, "alternate rest and labor, long endure."

The causes of dyspepsia are most varied and it is essential that the general types be differentiated. The dyspepsias may be conveniently divided into three general groups: functional, reflex and organic.

### FUNCTIONAL DYSPEPSIA

The chief characteristic of functional dyspepsia is that it is usually continuous and the patients are often of the asthenic type, that is, their condition either conforms to the type classified as chronic nervous exhaustion or the borderline of this very unfortunate state. Functional dyspepsia stands first both in frequency and in the degree of annoyance and suffering that it causes the patient. It is difficult to control since it is dependent on fundamental faults in the individual and it is only by a slow building-up process of the reserve force that the stomach in turn will function normally. This building-up process is tedious and must be carried out under the direction of a physician who understands not only the condition, but the

\* The Mayo Lecture in Surgery delivered at the University of Michigan, October 18, 1927.

patient. The patient must have absolute confidence in the physician and, above everything, must have faith that the plan he is following will bring satisfactory results. Lack of faith results in many failures and turns the patient to those irregular practioners and quacks who, because of their positive assertion that they know the exact cause of the ailment and their equal assurance that they can cure the patient, inspire faith which in many instances alone will bring about a good result. It is, however, essential that the physician is not deceived by the patient who obviously is suffering from functional dyspepsia but who may (although the law of compensation apparently gives him a higher protection against serious organic disease than the normal person) also have serious organic disease in the stomach or duodenum or in some other organ of the body. One of the physician's most humiliating experiences is to attribute all the patient's ills to a functional disorder and then discover, or have some one else discover, some organic trouble which is responsible for at least part of the patient's trouble.

#### REFLEX DYSPEPSIA

This type of dyspepsia is the result of a disease process in some part of the body, usually in the gall-bladder and the biliary tract. The most common symptom of gall-bladder disease is dyspepsia and most patients complain of gaseous distention and distress from certain kinds of food, thus attributing their trouble to the stomach itself. A less common symptom is recurring appendicitis, but in almost any acute or chronic disease the stomach may be acutely or chronically disturbed. It is hardly necessary to describe the acute form because it is familiar to all students except the favored few to whom examinations are not to be feared.

#### ORGANIC DYSPEPSIA

For present purposes the important dyspepsias are the organic, that is, those dependent on actual lesions of the stomach and duodenum. Such dyspepsias may vary greatly. The dyspepsia of ulcer may be so distressing as to prevent the patient from carrying on his usual daily work or it may be so light that he considers it hardly worthy of attention. The most significant fact is that a severe type of dyspepsia may mean a small and insignificant lesion whereas slight dyspepsia may mean carcinoma of the stomach. The supreme importance, therefore, of the differentiation

of the various types of dyspepsia is apparent.

#### DIAGNOSIS

One of the fundamental factors in the diagnosis of ulcer of the stomach is that the dyspepsia, whatever form it may take, is usually intermittent. This feature distinguishes it from functional dyspepsia in which the complaint is, as I have said, continuous. The chief characteristic of the dyspepsia of ulcer is its intermittency and that it is practically always related to food, the usual sequence being pain, food, ease, pain. The intervals between pain are governed to a considerable extent by the situation of the lesion, the characteristic time for ulcers which involve the duodenum being about three hours after the ingestion of food.

In carcinoma of the stomach dyspepsia is a rare and late manifestation, and if any progress is to be made in the early diagnosis of carcinoma, (which is the only way that progress in the treatment of carcinoma of the stomach can be made at the present time, because an early diagnosis often permits removal of the growth), we should evaluate the few early signs that are manifested by carcinoma. Patients in middle life who suffer any form of indigestion should have the possibility of carcinoma excluded by a most competent physician.

The details of the symptoms of diseases of the stomach and duodenum are not within the compass of this lecture. I would urge, however, that in all cases of dyspepsia a complete examination be made to exclude or establish possible lesions of the stomach. One of the most significant examples of the danger of overlooking disease is found in cases of benign tumor of the stomach. Many such patients have perfect digestion but come to the physician because of secondary anemia. There may have been no evidence of gross bleeding and it is only on fluoroscopic examination that the tumor can be detected. Very small benign tumors can be the cause of most profound anemic states.

It is at least theoretically true that no disease can be satisfactorily treated unless the nature and causes are known. Much is known about the nature and cause of various diseases of the stomach but also much remains to be known. Aschoff has recently directed attention to this point, namely that the reason why an acute erosion does not heal is more important than the cause of the acute erosion. Much experimental work has been done with refer-

ence to the cause of the most common organic disease of the stomach, peptic ulcer. Such ulcers can be produced experimentally in a great many ways, but most of them are the acute type that heal rapidly and do not simulate the chronic ulcer seen in man. Chronic ulcers, however, can be consistently produced by a method of excluding the alkaline secreting mechanism. Mann and Williamson have been able to produce experimentally in dogs chronic peptic ulcers having the same characteristics as those in man. The method is summarized by Mann as follows: "The pylorus is sectioned and the distal end closed. The first portion of the jejunum is sectioned and the distal end anastomosed to the pyloric end of the stomach. The proximal end of the jejunum is drained into the ileum at a distance greater than 50 cm. from the pyloric anastomosis." The ulcer begins to form approximately one month after the operation and occurs in the jejunum just distal to the anastomosis with the stomach at a point described as "where the acid gastric contents strike first and with the greatest force on the jejunal mucosa," which is accustomed to an alkaline content, and it may spread to include the line of suture. The ulcers have a tendency to develop and to perforate as similar ulcers in man. They will heal if protected from the gastric content. There is suggested in this experiment a mechanical and chemical explanation for the production of jejunal ulcers, or at least chronicity, and also for the chronicity of peptic ulcer in man.

Morton has shown by a series of experiments that the rapidity and the completeness of healing varies in different parts of the stomach. For instance, defects produced in the mucosa at various sites show that healing is most rapid along the greater curvature and most retarded on or near the lesser curvature, demonstrating experimentally one reason for the frequency with which chronic ulcers are found in the neighborhood of the lesser curvature of the stomach. Why there is such a high (more than 90 per cent) incidence of ulcers along the lesser curvature is conjectural but the fact that the lines of force and consequently the greatest trauma are along the lesser curvature offers a possible explanation.

Probably the most important factor in the inability of a mucosal erosion to heal is abnormal function. Sir James McKenzie in his later writings emphasized strongly the fact that disease is, in the

last analysis, usually dependent on the persistence of deviations from the normal function of a given organ. The exact function, for example, of the pylorus which certainly is a large factor in the production and maintenance of both gastric and duodenal ulcer is unknown. It is an interesting fact that there is no continuity of the musculature of the stomach and the duodenum; and Horton has also shown that there is practically no direct connection between the lymphatics of the stomach and the duodenum. In other words, the pylorus more or less completely divides the stomach and the duodenum. This is interestingly shown in carcinoma of the stomach which, regardless of how extensive it may be, will practically never extend beyond the pylorus to involve the duodenum.

A very important cause of gastric ulcer is unquestionably bacterial infection. Rose now's experiments, showing that ulcers can be produced in a certain percentage of cases by cultures made from organisms secured from ulcers in man, have been confirmed. Another significant factor in connection with the inability of certain ulcers to heal concerns the process by which healing takes place. Mann and Caylor, in experimentally produced ulcers, have shown that attempts at healing are constantly taking place. Such attempts are made through the development of buds of granulation tissue in the base of the ulcer; whether the ulcer is large or small and whatever constitutes its base, healing depends on whether or not such granulation buds are developed. The fact that a longstanding ulcer often develops such fibrotic changes in its base and that consequently no granulation tissue buds can be produced, explains why such ulcers cannot heal. The chief factor in healing, therefore, is the formation in the base of the ulcer of a plug of granulation tissue with an epithelial layer of single flat cells growing out, secondarily, from the margin of the lesion to cover the granulation tissue. The alternating character of the activities of ulcer of the stomach, if one may judge by the intermittence of the symptoms, may be due to the loss of this thin layer of tissue, by trauma or digestive juices. Mann believes this and also that the breaking off of these granulation buds explains the type of hemorrhage usually seen.

The cause of carcinoma of the stomach is, unfortunately, not known. There is, however, one type which is unquestionably



secondary to chronic ulceration of the stomach, just as carcinoma may develop in chronic ulcers in any other part of the body. The common form of carcinoma, however, is one which is primary and the cause of which is not any more understood than the cause of carcinoma in other parts of the body.

Of the more rare diseases of the stomach there is syphilis, caused by the *Spirochaeta pallida*. Gastric syphilis, however, does not occur more than one in a thousand cases of syphilitic infection. Tuberculosis of the stomach is extraordinarily rare and is caused by the invasion of the bacillus of tuberculosis.

#### DIFFERENTIAL DIAGNOSIS

I have already referred in a general way to the diagnosis of the various types of lesions of the stomach and duodenum. It may first be put down almost as an aphorism that persons who have chronic indigestion, periodically manifested, are likely to be harboring peptic ulcers either in the stomach or in the duodenum. In many cases the diagnosis must be made without any aid from the history, particularly if complications have ensued such as hemorrhage, obstruction, or subacute perforation. Fortunately, in most cases it is possible to employ aids that are extremely important.

So far as the diagnosis of gastric and duodenal ulcer is concerned, the outstanding advance which has been made in the last decade has been the recognition of these lesions by the roentgen ray. The mere fact that an ulcer of the stomach can be visualized by any method has been a great contribution to our knowledge of the disease; and such visualization is so precise that lesions which are difficult to demonstrate at the operating table can be definitely demonstrated by the roentgen ray. In duodenal ulcer it is seldom that the actual ulcer can be visualized, but the competent radiologist can, by indirect signs, arrive at a correct diagnosis in a large percentage of cases. The typical syndrome of both gastric and duodenal ulcer is too well known to require comment, but it should be emphasized that the uninterrupted course of gastric and duodenal ulcers is distinguished by the fact that the symptoms become progressively worse after the ulcer has become established. This is particularly true of gastric ulcer and its symptoms usually show clearly that it is a much more serious lesion than duodenal ulcer, and also a

greater menace to the patient. When the roentgen ray shows a lesion to be present in the stomach, regardless of the severity or character of the symptoms and the degree of the patient's disability, the fact that there are three out of four chances that the lesion is malignant should always be borne in mind and the patient advised accordingly.

Symptoms of ulcer may exist for a great many years, some patients being able to keep themselves in reasonable comfort by a strict diet during attacks and by frequent holidays. Patients coming for consultation and treatment state that the average length of time symptoms exist is becoming less and less.

The characteristic signs of acute perforation of peptic ulcer are sudden severe abdominal pain with rigidity in the abdominal muscles and increasing evidence of shock. The fact that early operation is the only chance of saving the patient's life and that in the first few hours operation is as safe as any abdominal operation, has been repeatedly proved. It is also realized that after the early hours have passed operation is less and less likely to save the patient's life. Subacute perforation may also be suspected from the history of the patient, and the severity and situation of the pain. In ulcers situated on the posterior wall (and this is the most common situation for gastric ulcer and for duodenal ulcer) subacute perforation with attachments to structures behind the stomach and duodenum are usually followed by a change of symptoms and are usually accompanied by lumbar pain.

Gastric hemorrhage may be most confusing both from the standpoint of deciding on the source of the hemorrhage, (that is, whether an ulcer actually is present or not), and the determination of what is the best form of treatment. It is well to emphasize that there are many causes for gastric hemorrhage other than ulcer, both intragastric and extragastric, and although ulcer is the most common cause, there are many pitfalls in assuming the bleeding to be due to ulcer.

The diagnosis of obstruction may be made from the data brought out in the clinical history of the patient: a history of food retention, by motor meal, and by analysis of the gastric contents. A significant phase of cases of obstruction is concerned with the fact that there may be toxemia of varying degree associated with such obstruction and that this toxemia manifests itself in the increase in the blood



urea, in the carbon dioxide combining power of the plasma (alkalosis), and in the decrease of the blood chloride. McVicar has also shown that tetany may be anticipated when the carbon dioxide combining power exceeds 100 per cent by volume. It is not only by estimating these factors, but also by restoring them to normal, that the internist is able to contribute so much to the safe management of such cases. Such restoration is accomplished by intravenous administration of sodium chloride solution and 10 per cent glucose, and by the avoidance of alkalis. Under such management the improvement in patients, even when in a condition so critical as to be beyond the control of other measures of relief, is most striking, and constitutes an advance in treatment which is little less than epoch making.

The recognition of carcinoma developing on ulcer cannot be depended on. It is dangerous to believe that such changes can be recognized because if they are recognizable the opportunity for curing the patient has probably gone by. The two most important facts in connection with carcinomatous degeneration of gastric ulcer are that it does occur, and that there is no known means of its early recognition.

The value of the test-meal in differentiating organic and functional disease of the stomach is important but not absolutely reliable. It is usually found that peptic ulcer is associated with hyperacidity but the fact that the acids may be normal or that there may even be hyp acidity will guard one against depending too much on making such analysis. This is also true in carcinoma of the stomach, and to assume that carcinoma is not present because there is free hydrochloric acid in the stomach may be a very unfortunate error, because in almost half of such cases free hydrochloric acid is found.

#### TREATMENT

The treatment of the lesions of the stomach to which I have referred, can be summed up briefly. In case of carcinoma of the stomach the only possibility of cure is removal. In case of gastric ulcer, unless there are marked contraindications to operation, it is safer to remove the lesion. In case of uncomplicated duodenal ulcer the advisability of operation depends on the degree of disability. The longer symptoms of the ulcer have existed the more definite are the indications for operation. In duodenal ulcer with complica-

tions, that is, hemorrhage, perforation and obstruction, operation is clearly indicated. It is not my purpose here to discuss the details of operative procedures, but it may be said that the important principles in gastric ulcer are that the lesion should be completely removed if possible and adequate drainage established. In duodenal ulcer, excellent results may be obtained by an indirect operation, usually gastro-enterostomy. In gastric carcinoma the purpose of operation is to remove the growth and the regional lymph nodes, and restore gastro-intestinal continuity by some suitable method of anastomosis.

### THE USE OF LIPIODOL IN THE EARLY DIAGNOSIS OF PREGNANCY\*

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The signs of early pregnancy fall into two categories (1) physical changes in the reproductive organs, (2) biochemical reactions. The hope that the Roentgen ray would help in interpreting early physical changes, is only just now being realized. The demonstration of fetal bones with the aid of X-ray is not possible before the third or fourth month. Edling claims to have photographed fetal bones in utero early in the third month, but this has been questioned by Bartholomew and others. Leiser says that in the Dresden clinic no fetal bones could be demonstrated before the twelfth week. Between the fourteenth and twentieth weeks most cases were positive. Quite recently Jungmann describes a technic by which fetal bones may be shown in the eighth or ninth week, but his work has not been confirmed.

With pneumoperitoneum and X-ray, Peterson demonstrated a characteristic broadening of the isthmus of the uterus in early pregnancy. Burch, using Peterson's technic, found what he believes to be a pathognomonic sign of pregnancy, viz: a much thickened uterine wall, with a distinct cavity containing a mass. Peterson in a later paper states that the interpretation of the shadows in pneumoperitoneum is too difficult and says that an absolute diagnosis of pregnancy must rest upon demonstrating the fetus in some unmistak-

\* Presented before the Post-Graduate Conference held under the auspices of the Michigan State Medical Society, the Wayne County Medical Society and the Alumni Association of the Detroit College of Medicine and Surgery, May 14-17, 1928.



Figure 1. (Case 13)  
Early pregnancy showing "atonic" uterus.

able manner, fetal heart tones, fetal movements or earlier still, fetal bones.

In 1924, Heuser published a paper on the diagnosis in the first months of pregnancy with the X-ray. He took great pains to rid the large bowel of fecal mat-

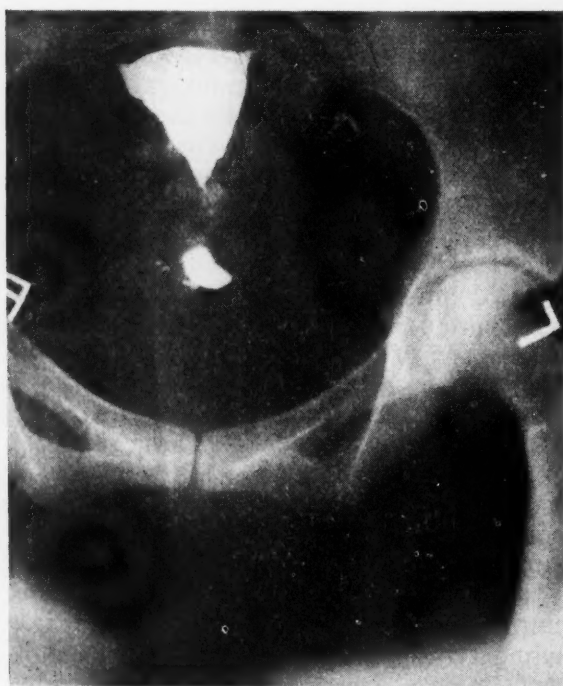


Figure 2. (Case 13)  
Early pregnancy showing retention of the lipiodol, a filling defect posterior and to the right. Both tubes are patent.

ter and gas, using first a purge (10 grs. of calomel) and then belladonna and bone charcoal. Better pictures of the uterus could be obtained by inflating the bladder with air. To make the uterine cavity more visible he says you could inject therein 1, 2 or 5 c.c. of lipiodol. In subsequent publications he says that lipiodol injections are very useful in the early diagnosis of pregnancy and that with a proper technic they are harmless.

Before adopting a procedure that is seemingly so radical one naturally would want to know (1) what effect lipiodol has

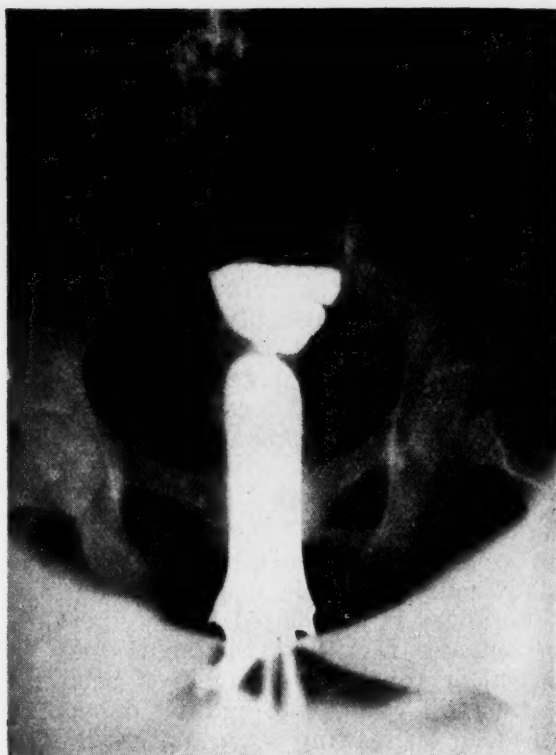


Figure 3. (Case 3)  
Early pregnancy showing "atonic" uterus, filling defect on left side and closure of left tube.

upon the female genital tract, (2) the ill effects, if any, from its use in other gynecological conditions, (3) the risk of upsetting pregnancy, (4) effect, if any, on the child.

Since 1912 a number of radio-opaque substances have been used in the uterus. Douay gives an interesting account of this. In that year, Le Lorier made intra-uterine injections of electrargol in order to determine the patency of the tubes. He presented his work at the Congress at Lille in 1913, but did not publish it. The first attempt to use the X-ray in connection with the injection of radio-opaque fluid was done in Pozzi's clinic by Dimier. He used collargol and after the death of a patient

from peritonitis the work was abandoned at Pozzi's advice. This work, written in collaboration with Dartiques before the war, did not appear in print until 1916. The first published radiographs of the uterus and tubes were made by Cary in 1914. These were also made with collargol. The following year Rubin published his first radiographical researches upon the uterus and tubes. In his first work he used collargol, but later abandoned this for citrate of thorium or bromide of sodium. In 1923, Kennedy re-

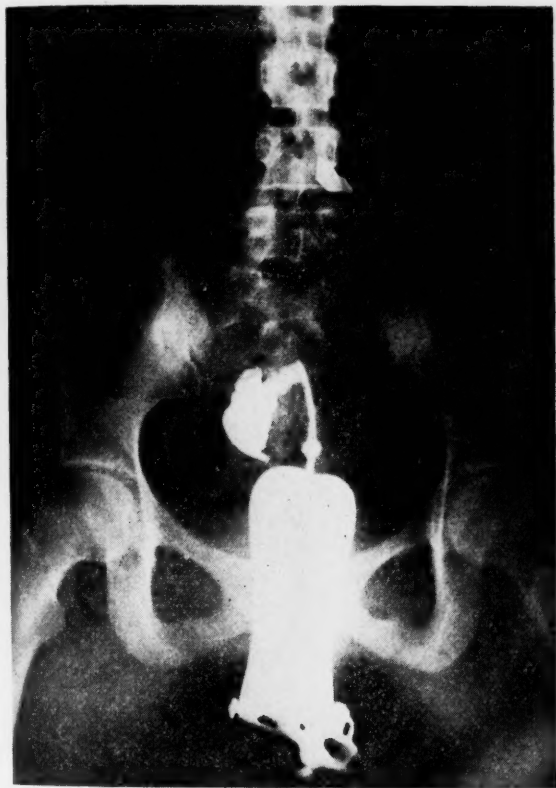


Figure 4. (Case 1)  
Early pregnancy showing a markedly anteverted uterus, "atony" and filling defect. The left tube is visualized.

peated Cary's and Rubin's work, using in his cases 20 per cent sodium bromide solution. In the meantime in 1921, Heuser in Buenos Aires had begun his work with lipiodol injections which he first reported in 1924. In 1925 he demonstrated his hystero-salpingograms and his technic in Paris. Following this, there appeared a series of beautiful publications by Mocquot, Gregoire, Beclere and Darbois, Cotte and Bertrand and others. In Germany, Schober utilized the method of Kennedy in 1925 and the following year Joachimo-vits employed, with good results, iodipin. In Russia, Serdukoff used a 25 per cent to 40 per cent sodium bromide solution. Recently, however, most gynecologists and



Figure 5. (Case 20)  
Pregnancy in 3rd month showing large "atonic" uterus and an irregular filling defect on left side. Both tubes are closed.

roentgenologists are using some of the iodized oils as contrast material. Dyroff and Rubin used lipiodol in their work upon the physiology of the tubes. Many clinics are using hysterosalpingography in their study of sterility and quite a few are finding it useful in the diagnosis of various pelvic conditions. So that now there has collected quite a mass of material from which one can judge its dangers in the non-pregnant woman. Gauss thinks it is not without danger of lightening up an old inflammatory process, while Carreras



Figure 6. (Case 6)  
Pregnancy in 3rd month, showing large "atonic" uterus and filling defect on left side.



and his co-workers find lipiodol injections very valuable in the diagnosis of inflammation in and around the adnexia. Haselhorst had two inflammatory reactions to follow the use of iodipin. Odenthal, in 15 cases of sterility studied with radio-opaque fluids, had 2 cases of inflammation. One followed the use of "contrastol" and the other of "iodipin." Hellmuth reports



Figure 7. (Case 15)  
Pregnancy in 3rd month. The ovum more nearly fills the cavity.

a fatal case of peritonitis that followed the injection of 3 c.c. of "umbrenal." Henkel says that he used to have trouble with collargol and "umbrenal", but that he has never seen any inflammation follow the use of iodipin, even when he operated upon the patient the day after the injection. Some of Forsdike's cases bled from the uterus shortly after the injection of lipiodol. Heuser has seen no signs of inflammation in the hundreds of cases of lipiodol injections in his clinic. Steinharter and Brown, Randall, Newell, McCready and Ryan in this country have had no untoward results from lipiodol or iodipin. Rubin says that in a few cases lipiodol was found in the tubes several months after the injection, but no symptoms referable to its presence were found. McCready and Ryan found lipiodol in the peritoneal cavity as long as 9 weeks after its instillation.

Not only has there been no report of lipiodol causing inflammation after its instillation into the uterus and tubes, but

Greene and Pandergrass report an actual improvement in 3 or 4 of their patients with chronic salpingitis. Heuser is said (Proust and Beclere) to have seen closed tubes open up in four cases after repeated injections of lipiodol, and we ourselves have had one such case.

A number of observers have studied the direct effect of lipiodol upon the tissues, especially the tubes and the peritoneum. Proust and Beclere state that if the tubes are open, there is no sign of the lipiodol after 24 hours. If the tubes are closed there is histological evidence of absorption, but no inflammatory reaction. Cotte and Martin also found that lipiodol disappears without leaving a trace when the tubes are open. From closed tubes it is taken up by macrophages without signs of inflammation.

Jaroscha says that with a good technic the danger of infection is slight, but there is a greater danger of carrying metastasis of uterine desidua or growths into the peritoneal cavity. He has, however, seen

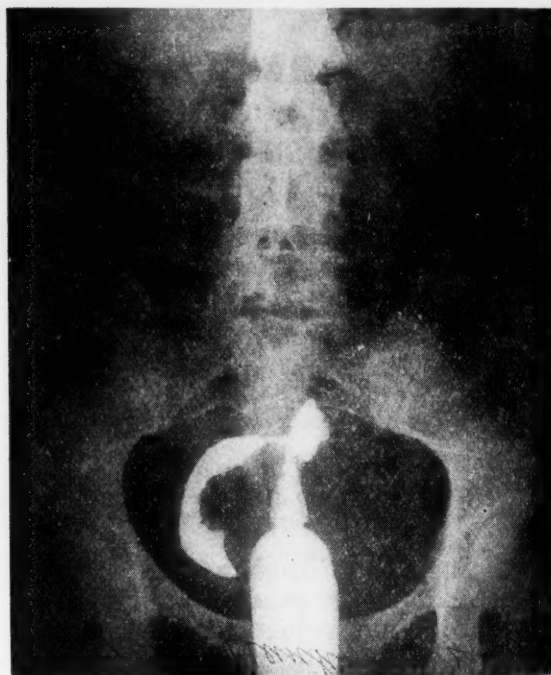


Figure 8. (Case 16)  
Pregnancy in 3rd month. The ovum fills all but a narrow strip on right side of the uterus.

no such case. The possibility of an embolus is to be thought of especially since oil can be forced into the veins of an extirpated uterus. It requires, however, 300 m.m. of Hg. pressure which is higher than is ever used clinically. The danger of rupture of the tubes is only to be considered when undue pressure is used for the injection.

While it is the general opinion that the injection of lipiodol into the uterus and tubes of the non-pregnant woman is safe, when it comes to injecting the pregnant uterus there is quite a different opinion. Siredey, in discussing Proust and Beclere's paper on the use of lipiodol in the diagnosis of uterine hemorrhages, says it is not to be thought of if there is a suspicion of pregnancy. Beclere agreed to this, and similar statements are made by Temesvary and Leiser. Dyroff says that the suspicion of pregnancy is perhaps a contra-indication to the injection of iodized oil (he prefers "contrastol") into the uterus for diagnostic purposes. In three cases in which he wished to interrupt pregnancy he tried this diagnostic method. These cases went eight, ten and twenty-one days without signs of aborting. He says if wider experience proves the innocuousness of this procedure the diagnosis of pregnancy should be possible as soon as there is an "ausbuckelung" of the desidua. Heuser

Proust and Becleres' paper, states that Juan Vanrell of Barcelona told him that he had made lipiodol injections in two cases of pregnancy and in one an abortion followed. Haselhorst reports obtaining a typical picture of pregnancy with iodipin in a 22-year-old III gravida epileptic. Both tubes were patent. Following the injection there was high fever and pain in the lower part of the abdomen. The patient aborted on the fifth day. Jungmann reports that in a 6 months uterine pregnancy the injection of 7 c.c. of iodipin



Figure 9. (Case 16)

A better view of the filling defect obtained in the Sim's position.

says that he and his colleagues in Buenos Aires have never caused an abortion in this manner. In fact, he and Dr. Uslenghi and Dr. Martinez have tried to produce abortions in tuberculous patients by this method, but have been unsuccessful. Beclere in closing the discussion upon



Figure 10. (Case 19)

Threatened abortion. Note wide distribution of the lipiodol. Its flocculent appearance is due to presence of blood.

established the diagnosis. Abortion in this case was produced by a bougie. Steinharter and Brown show a picture of an early pregnancy, but there is nothing said about the outcome of the case. Quite recently they have reported a case of early pregnancy in a bicornate uterus. This patient went to term and had an uneventful puerperium. Arnstam and Reinberg report three cases of pregnancy in which lipiodol was used in the diagnosis. There was no influence upon the pregnancy. Schneider and Eisler used this method of diagnosis in four cases of pregnancy in the second and third months, none of which aborted spontaneously. A fifth case, that of a bicornate uterus in which they were able to show the difference of response of the two horns to pituitary extract, aborted. Ott's eight cases were aborted artificially on the eighth day after the injection of iodipin. Unfortunately, the number of cases Heuser has had is not stated and therefore we cannot reduce the abortion-risk to figures.

#### RADIOGRAPHIC TECHNIC

Patient is given morphin gr. 1/6 and hyoscin gr. 1/200 and is prepared as for

delivery. (Shaved, soap and water scrub up, bichloride, mercurochrome 2 per cent in the vagina.) She is placed on a Bucky diaphragm in the most advantageous position, depending on the position of the uterus. The cervix is exposed with a bivalve or Sim's speculum and a cannula is introduced under the guidance of the eye. Lipiodol is slowly and gently injected with a Luer syringe until resistance is felt or the patient complains of cramps. The technic is 30 milli-amperes, 5 inch spark gap, with variation of time according to the thickness of the patient. Exposures are made in at least three different positions, antero-posteriorly or postero-anteriorly, Sim's position, or the ventral Trendelenburg's position. The first exposure is made after the solution has had time to pass out into the tubes. The second exposure is made immediately afterwards, usually in the Sim's position. A third one is made from five to ten minutes after patient has been allowed to sit in the erect posture.

#### REPORT OF CASES

Case 1—M. L. (colored) age 21, O-para, referred by the T. B. clinic. The patient had "gone over" a period three weeks. Vag. exam. showed a soft anteflexed uterus. Hysterosalpingography showed an enlarged cavity with a filling defect. Curettage the next day under sacral analgesia confirmed the X-ray diagnosis of pregnancy.

Case 2—M. J. (colored) 55, multipara, admitted to St. Philip Hospital in convulsions with no history. There was an abdominal mass that extended nearly to the navel. Patient was treated for eclampsia. After she recovered from her coma and we learned her age, we attempted to find out an explanation for the size of her uterus. H. S. was done, but we did not have enough oil to fill the uterus and got a wrong impression, thinking there was a filling defect. Exploration showed a large empty uterine cavity. Diagnosis of subinvolution with fibroids.

Case 3—Mrs. W. L. C., age 24, I-para, (reported in Johnston Willis Bulletin). This patient had a severe pre-eclamptic toxemia in July, 1926, from which she had not fully recovered. Her last menses began March 26, 1927. H. S. on May 6th (13 days after she missed her period) showed an enlarged globular cavity with a filling defect on the left side. Curettement on May 7th under sacral analgesia. Ovum found at situation indicated by the filling defect.

Case 4—Mrs. W. L. B., age 22, II-para. The youngest child was born February 19, 1927. Menses reappeared April 31, 1927 and lasted 5 days. She had not menstruated since. H. S. on July 12, 1927 showed a triangular uterine cavity of normal size. Both tubes were open. Subsequent history confirmed our diagnosis of "not-pregnant."

Case 5—Mrs. A. W. G., age 30, I-para. Spontaneous abortion in 1922. Premature spontaneous delivery in 1926. Patient left her husband in March, 1927. She missed her next period. Patient took a dose of castor oil and had a little bleeding. In May a doctor in Louisiana gave her a dose of ergot after which she passed two clots

without pain. Amenorrhoea until July 14 followed by bleeding for 28 days. Vag. exam. showed an anteflexed, soft, globular uterus that was a little enlarged. H. S. on August 15, 1927 showed an enlarged globular cavity with a small filling defect near ostium of left tube. Both tubes were patent. Uterus did not empty. On exploring the uterus under sacral analgesia, an old leathery placenta was found.

Case 6—Miss M., age 22, O-para, menstruated for 1 day on June 17, 1927. There was a soft, globular uterus about the size of a 3½ months' pregnancy. H. S. on August 18, 1927 showed an enlarged cavity with a filling defect on left side. Neither tubes is visualized. Uterus did not empty quickly. A diagnosis of pregnancy was made. On her own responsibility patient took castor oil and quinine and 50 mile automobile ride over rough roads. Patient became morose, refused to eat and threatened suicide. Finally, after several consultations she was aborted.

Case 7—Mrs. W. C. G., age 26, I-para. Patient developed suspicious signs of tuberculosis in her former pregnancy. She was delivered February 10, 1927. Her last menses began August 27, 1927. On September 30th vaginal examination showed a soft, anteflexed uterus. H. S. October 1, 1927, showed a triangular, slightly enlarged cavity, with no filling defect. Left tube was patent. Right tube was not visualized. Uterine cavity emptied well. Patient menstruated the next week and has menstruated regularly since.

Case 8—E. L., age 12. Patient was the victim of attempted rape several months ago, and since then there has been some question as to her conduct. Patient was brought for examination by probation officer. Vagina was reddened. Uterus was soft and could not be satisfactorily outlined. H. S. (December 16, 1927) showed an infantile uterus with patent tubes. The uterus emptied completely in a few minutes.

Case 9—Mrs. L. C. T., age 46, I-para. Menstruated last, December 16th. On January 23, she had a small anteflexed uterus, but nevertheless was confident she was pregnant. H. S. January 25, 1928 showed a triangular cavity that emptied quickly. No filling defect. Both tubes were outlined.

Case 10—Miss I., age 29, O-para. She had scanty December and January periods and feared she was pregnant. The uterus was enlarged and nodular. H. S. on February 9, 1928 showed a rather large triangular cavity with patent tubes. No filling defect. After the patient sat up for ¼ hour the cavity still contained lipiodol. Subsequent course confirmed our diagnosis of not pregnant.

Case 11—Mrs. D. G., age 24, O-para, believed she was 3 months' pregnant but had an abdominal tumor that corresponded to a 6 months' pregnancy. Diagnoses of multiple pregnancy or hydatidiform mole were considered. H. S. showed a single fetal skeleton lying just above the egg-like mass of lipiodol. The uterus failed to empty after the patient sat up.

Case 12—Mrs. R. C., age 40, O-para. Patient menstruated a little irregularly in January and February and was confident that she was pregnant. H. S. March 12th showed a small, triangular cavity. Right tube was not visualized. Uterus emptied readily. Pseudocyesis.

Case 13—Mrs. W. J. B., age 34, III-para. Last menses began February 9. On March 10th blood pressure was 155/110, a little jaundiced. H. S.



March 12, 1928, showed an enlarged, rounded uterine cavity that did not empty when patient was in the erect posture. There was a filling defect on the posterior wall. Both tubes were visualized. Patient took castor oil March 13th and the following day had some bleeding. After a week's time patient gave up hope of aborting at home and returned to the hospital for a curettement which was done under sacral analgesia. The ovum was found at the place indicated by the filling defect.

Case 14—Mrs. W. W. W., age 31, IV-para. Her last menses began March 1, 1928. Examination on April 5th showed a large, soft, retroverted uterus. H. S. showed a triangular cavity that emptied partially. Both tubes were open. Subsequent history supported our diagnosis of "not pregnant," the patient menstruating normally April 14.

Case 15—Mrs. L. G. M., age 32, I-para, gives a history of having been ill with phlebitis for 3 months after a Cesarian section. Last menses began February 17, 1928. H. S. on April 11, 1928 showed an enlarged horse-shoe cavity. Neither tube was visualized. Uterus did not empty.

Case 16—Mrs. T. E. D., age 30, IV-para. Last menses began February 1st. On February 15th she began to have cramps and a leucorrheal discharge. The discharge became blood tinged. On February 29th she began to have severe cramps and more bloody discharge. For the past week she has had a brown discharge. Vag. exam. on April 11 showed a soft retroverted uterus. H. S., the same day showed an enlarged cavity with a steer-horned appearance. The left side of uterus was not outlined. Neither tube was visualized. Since then patient has taken two 1,500 mile railroad journeys and has had cramps and bleeding, but is still pregnant.

Case 17—Mrs. J. P. C., age 28, V-para. Her last confinement was July 29, 1926. She has not menstruated since. This week her doctor found an abdominal mass. She has had several opinions as to the nature of the mass. H. S. April 17, 1928 showed outline of fetal spine overlying an irregular mass of iodized oil. Uterus did not empty when patient sat up. At the present time the pregnancy is uninterrupted.

Case 18—Mrs. J. R. J., age 20, I-para. Patient was confined December 5th and has not yet menstruated. She thinks she is pregnant. H. S. April 19, 1928 showed a triangular cavity with patent tubes. The uterus emptied completely. Diagnosis not pregnant.

Case 19—Mrs. L. A. R., age 32. Last menses began January 25. She was sent into the surgical department of Memorial Hospital on account of a bleeding tumor. H. S. April 20th showed a round "wind-blown" shadow with a central filling defect. Patient completed the abortion two days later.

Case 20—B. J., (colored). Referred by T. B. clinic because she has missed two periods. H. S. on April 23, 1928 showed a horse-shoe shaped cavity with a filling defect on left and post wall. Patient was curetted under sacral analgesia 5 days later.

Case 21—Mrs. S. A., age 19, I-para. She had menstruated only once, March 3-10, 1928, since her confinement. H. S. on April 26, 1928 showed a triangular cavity and patent tubes. The uterus empties readily.

Case 22—Mrs. H. B., age 22, I-para. Her last menses began February 28. Since March 30th she

has had abdominal cramps and uterine bleeding. The uterus was enlarged and tender. H. S. on April 27, 1928 showed a whorl-like shadow with a central filling defect. The tubes were not visualized. The cavity did not empty.

Case 23—Mrs. M., age 40, VI-para, referred by the T. B. clinic. H. S. on May 5, 1928 showed an enlarged, round shadow with a filling defect on the post wall. The left tube did not fill. The right tube showed a well marked sphincter. Curettage May 7th under sacral analgesia.

Case 24—Mrs. J. L. L., age 23, II-para. Her last baby was born December 17, 1927. Last menses began March 31. Vag. exam. on May 5th showed a soft, anteflexed uterus. H. S. on the same day showed an enlarged atonic uterus with a filling defect on superior border. Left tube did not fill.

#### DISCUSSION

This report is based upon the study of 24 cases, 13 of which were pregnant, 10 cases of suspected pregnancy, in which we were unable to make a negative diagnosis without hysterosalpingography, and 1 case of prolonged retained immature placenta. Three of the 13 cases were cases of threatened abortion, with abdominal pain and bleeding. The duration of pregnancy in the 13 cases varied from 5 weeks to 5 months. Five patients had missed only one period, 5 had missed two periods, 1 had missed three periods, and 2 were in their fifth month of pregnancy.

#### DIAGNOSIS

The diagnosis of pregnancy by hystero-graphy depends upon (1) showing a relaxation of the uterine wall, (2) demonstration of the ovum, (3) closure of one tube, (4) failure of the uterus to expel the oil.

The relaxation of the uterine wall is shown by a rounded or globular uterine cavity. Its size, of course, depends upon the duration of pregnancy. This flaccid condition of the uterus is quite characteristic of pregnancy, but it does not differentiate an intra-uterine from an extra-uterine pregnancy. On the other hand, a sharp angular shadow is a positive sign that there is no uterine pregnancy. All of our pregnancy cases have shown a rounded contour of the uterine cavity.

The situation of the ovum is shown by a filling defect and when it occurs in a rounded uterine cavity it is quite characteristic of pregnancy. Submucous fibroids occur in angular uterine cavities. One of our extra-uterine pregnancies showed many irregular filling defects due to blood clots. The filling defect caused by a post-abort retained placenta is possibly the most confusing condition. Here one has the pregnancy-relaxation and the single

filling defect. However, the filling defect is much smaller than that which occurs in any save the very early pregnancies.

The closure of one tube occurs in most pregnancies and is a useful confirmatory sign. It does not, however, have the diagnostic value that the first two signs have. All of our cases of pregnancy except No. 13 showed at least one tube closed.

The retention of the lipiodol in the uterus after the patient has sat up for a while, occurred in all of our pregnant cases. It was usually absent in non-pregnant cases. Cases 5 and 10 retained the lipiodol well and case 14 partially. One of our sterility cases also retained the oil within the uterus for some time. With these exceptions it has been our experience that the non-pregnant uterus quickly rids itself of the oil. It is interesting to conjecture why the pregnant uterus should retain the oil. Proust and Beclere speak of a characteristic irritability of the uterus in a case of retained placenta. Heuser says that after filling the cavity with lipiodol one can with fluoroscopy, aided by a magnifying glass, see wave-like contractions that travel toward the neck if there be any foreign body (remnants of abortion, pregnancy or fibroma) present. It is conceivable that an irritable uterus might close upon and retain the oil, just as it sometimes does with the placenta, especially after the use of pituitrin. The occurrence of the retention in our sterility case, who was a very nervous person, would seem to favor such an explanation. Again it might be argued that the ovum interfered mechanically with the oil draining out. Case 11 would refute this, as all the oil formed a globular mass in the lower uterine segment below the fetus. A third possibility is that it is the very lack of irritability that allows the oil to remain in the uterine cavity. The atonic appearance of the uterine walls lends color to this idea. The fact that the patients do not abort speaks against an increased irritability. The recent work upon function of the corpus luteum shows that this body has an inhibitory effect upon the emptying power of the uterus. Case 10, and the case of sterility mentioned above, menstruated soon after the injection. In other words, the injection was made at the time of maximum activity of the corpus luteum. In case 14 the patient began to menstruate 9 days after the injection when the corpus luteum was beginning to be active. The pregnancy cases, of course, were under the influence of the

corpus luteum of pregnancy. It would seem, therefore, that the failure of the uterus to expel the iodized oil might be an indication of the presence of an active corpus luteum.

#### THE RISK OF PRODUCING AN ABORTION

Only three cases have been reported in which spontaneous abortion has followed the injection of iodized oil into the uterus. Vanrell is said to have had one such case. No details are given in this case. Haselhorst reports one case that, after the injection of iodipin, had a high fever and abdominal pain. This patient aborted on the fifth day. In the same paper he reports bilateral salpingitis in a 22-year-old maiden after the same technic. It is hard not to have the feeling that infection was the cause of the abortion and not the iodized oil. Schneider and Eisler's case is interesting. Their patient had a pregnancy in one horn of a bicornate uterus. By injecting pituitary extract they were able to see on the fluoroscopic screen the non-pregnant horn contract and force the lipiodol out of the non-pregnant part into the pregnant horn. They feel that the oxytocic was possibly the cause of the abortion which followed.

In the present series of 13 cases spontaneous abortion occurred once, which is well over Williams' estimate of one spontaneous abortion to every 5 or 6 pregnancies. Two of our cases (cases 1 and 3) were curretted the day following the injection, and one case (case 23) the second day, and therefore were not given much opportunity to abort spontaneously. Three of the cases (cases 16, 19 and 22) were threatening to abort, at least, they had been bleeding and were having abdominal pains at the time of the hysterosalpingography. One of these (case 19) expelled the ovum two days later without febrile reaction. Most of the patients were anxious to abort and after the investigation energetically used various homely practices, purgatives, automobile trips, etc., in the hopes of accomplishing their desires. One of them (case 13), had a little vaginal bleeding after the injection, but this stopped, and she was aborted artificially a week later. Five (cases 15, 16, 17, 22 and 24) are still pregnant.

#### EFFECT UPON THE CHILD

There has been only one case reported that has gone to term, that of Steinharter and Brown's. This child was apparently normal in every way. The other cases re-



ported of hysterosalpingography in pregnancy, all had therapeutic abortions. None of our cases in which pregnancy was not artificially interrupted have had sufficient time to go to term.

## CONCLUSION

1. Hysterosalpingography offers a means of making an early diagnosis of pregnancy, especially valuable in such cases as tuberculosis in which a therapeutic abortion is indicated.

2. The risk of its producing abortion requires further investigation. From our experience this risk does not appear to be great.

3. It is a method of considerable value in making a negative diagnosis.

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# OBSERVATIONS OF URETERAL CALCULI

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The object of this preliminary study is to obtain some data as to the proper management of patients with ureteral calculi, and especially as to the efficacy of cystoscopic manipulation. The analysis is based on the material obtained from sixty-two consecutive cases admitted as in-patients to the Harper hospital. They represent only two-tenths of one per cent of the total admissions. The true morbidity, we believe, is considerably higher, since comparatively few patients with this disease are hospitalized.

The group presented several interesting clinical characteristics which may be summarized as follows:

*Sex:* The disease was twice as frequent in the male as in the female, occurring in 40 males and 22 females.

*Age:* The accompanying graphic chart is self-explanatory. No patients were under 20 years of age and only one was over 60.

## PREVIOUS HISTORY

In our series, 23 (39 per cent) had had previous abdominal operations. Another striking fact was that 10 patients had previously had appendectomy performed, and in 8 of these, the calculus was in the *right* ureter. One patient had a severe colic during post-operative convalescence. This emphasizes very strongly the importance of excluding ureteral calculus before oper-

ating for chronic appendicitis. Given a patient with a ureteral calculus, we feel that the chances are more than even that the calculus will be missed and a diagnosis of some intra-abdominal condition will be made.

## X-RAYS

There were 49 positive and 13 negative X-rays. With a negative X-ray, a diagnosis was accepted as positive only when the patient subsequently passed a stone, or when the clinical history with the laboratory findings were so definite as to exclude any other diagnosis. With these rigid qualifications it is probably that several cases were excluded from consideration which in reality had a ureteral calculus, and consequently the estimate of 21 per cent with a negative X-ray may be too low. It may be pointed out that the average above presented (21 per cent) is also the average that obtains in the literature.

## LABORATORY FINDINGS

Red blood cells were present in 39 cases (63 per cent). They were definitely absent in 12 (20 per cent). In 8 cases the presence or absence was not noted. We feel that the presence or absence of blood cells is a very important diagnostic feature, and the actual percentage is probably nearer 75 than 62.

## LOCATION OF STONES

This was determined from a study of the 49 cases in which the X-ray was positive. The findings are shown in the following table:

Right Utero Pelvic Junction.....	1	L. U. P. J. ....	3
Right Upper Segment .....	3	L. U. S. ....	5
Right Lower Segment .....	1	L. L. S. ....	1
Right Utero Vesical Junction.....	18	L. U. V. J. ....	17
	23		26

Figure 2.

## TREATMENT

One of the following procedures was adopted when a patient entered the hospital:

1. A diagnosis was established, and the patient was discharged without further treatment.
2. After the diagnosis was made, cystoscopic manipulation, consisting of dilatation of the ureter, and attempts to dislodge the stone with the various instruments especially constructed for this purpose, was carried out.
3. An open operation removed the offending calculus.

In each instance the history was exam-

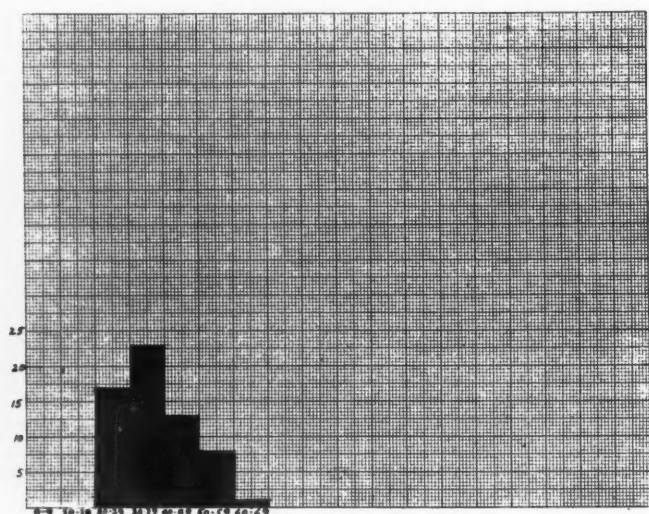


Figure 1.

Key—Abscissa—Age by decades—Ordinates—No. of cases.

ined relative to the duration of the disease and the number of the attacks. The X-ray plate was examined to determine the actual size of the stone and its shape, particular notice being taken of its regularity or irregularity. Finally, the subsequent history of the patient was investigated to determine whether a stone was passed.

In estimating the size of the calculi, we realize that the X-ray shadow does not reveal the exact size of the stone. A stone of a certain size will cause a somewhat larger shadow in an obese individual than the same stone would in a thin individual. At the same time these variations are not sufficient to prevent us from obtaining some idea as to the relative size of the stone from measurement of the shadow on the X-ray plate.

These findings are best expressed in the following table:

	No.	Size	Shape Irreg.	Duration	Attacks	Passed	%
No Manipulation	20	0.4 cm.	12%	11 days	3	13	65
Manipulation	36	0.6 cm.	33%	96 days	5	27	75
Operation	9	1.1 cm.	50%	600 days	8	—	—

Figure 3

It is obvious that patients, in whom cystoscopic manipulation was carried out, were a more complicated group than those in whom no manipulative procedure was done. The average size of the stones was six-tenths of a centimeter in the former, as compared with four-tenths of a centimeter in the latter group. Thirty-three per cent were irregular in the former, as compared with 12 per cent in the latter. In addition the average duration of symptoms was over 8 times as long with a slightly greater number of attacks. In spite of this, an even greater number (75 per cent) passed a calculus after manipulation than did so without manipulation (65 per cent). Our impression is, that if a stone is under seven-tenths of a centimeter, it will probably pass of its own accord or with cystoscopic manipulation; whereas, if it is over this size, it probably will not. Also if the attacks are frequent and severe, the possibilities of spontaneous passage are enormously increased.

The open operation was performed in nine cases. This is approximately 15 per cent of the total cases, a figure considerably below the ones quoted from various clinics. We feel that our figure (15 per cent operated on) is a conservative one. It is true that the average duration of symptoms is only two years; on the other

hand, if two cases are excluded in which the duration was very short and the stones small, the general average of the remaining case is enormously increased.

# SUMMARY

1. Cystoscopic manipulation is an effective form of treatment in the vast majority of calculi of the ureter.

2. Calculi, as recorded on the X-ray plate, three quarters of a centimeter and under, should be treated conservatively, (i. e., without operation).

3. Calculi larger than one centimeter in diameter—especially if irregular—will probably require open operation.

4. Calculi are most likely to pass if many ureteral colics occur at relatively short intervals. Conversely, patients having relatively few colics and a long duration of symptoms should have an open operation at an early date.

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# INFLUENCE OF ROENTGENOLOGY ON THE PRACTICE OF SURGERY\*

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Were I so ungracious as to criticize the committee who have honored me with the invitation to review the debt of surgery to radiology, I would suggest that the choice of speaker should have fallen upon a surgeon who was actively engaged in surgical practice before the eventful day in December of 1895 which marked the birth of this new arm of medical science. To picture adequately the almost miraculous aid lent to surgical diagnosis and therapy by the fruit of Roentgen's discovery is a task which I can do scant justice. It is extremely difficult for us younger surgeons to realize the extent of the miracle. To quote Sir Berkeley Moynihan, "It requires a considerable effort of memory and some skill in reconstruction, to recall for ourselves the days when only the note given by a sound in the bladder as it impinged against a stone made cer-

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tain the diagnosis of calculus." And it was not a rare event in our student days to witness the disappointment of the surgeon on failing to find in the kidney the concretion so confidently expected in the light of the patient's symptoms. It was a matter of unforgettable pride when I first successfully radiographed the stone we had suspected in the renal pelvis of one of our guests. The rather adipose individual had been obliged to submit to a many-minute exposure, but by dividing it into fractions of fifteen seconds each, with a sufficient interval between efforts, the plate was at last sufficiently exposed and the diagnosis confirmed. And one of the most baffling surgical problems of those days was stone in the ureter until the x-ray permitted exact localization of the offending concretion.

As I say, it is nearly impossible for us of the present younger generation to realize the wonderful assistance rendered in the localization and extraction of foreign bodies—the first and most obvious help rendered by Roentgen's discovery; for even those surgeons still active who began their work before Roentgen's discovery have become so accustomed to our present luxuries that their memory of the distressing problems of the former days has been dimmed.

To help reconstruct the picture of surgical resources of a quarter of a century ago, let me quote from a popular surgical textbook of 1903 a summary of the value of the x-ray to the surgeon:

"The uses of the x-ray are legion. They are of the greatest possible value in the location of foreign bodies, especially bodies of metal, glass or bone; . . . to locate a Murphy button and tell us when it has loosened and descended. . . . A calculus in the kidney may exist and escape detection with the rays, because the kidney is very deeply placed, is under the ribs and close to the vertebral column. Occasionally a drainage tube lost in the pleural sac may be discovered. Most observers state that gallstones cannot be skiagraphed in the living body. The rays may fail to disclose a foreign body because of its being overshadowed by a bone, but prolonged exposure or taking of another picture with the part in another position may bring it into view. In many cases a skiagraph does not indicate how deeply in the tissues a foreign body lies, or upon which side of a bone it is lodged. . . . In detecting fractures and dislocations the Roentgen rays are of great value, especially when there is

much swelling, when there is little displacement, and when the fracture is in or about a joint. . . . Fractures of the spine *can* be skiagraphed, but never show very clearly. To take a picture of a fractured rib, first limit the motion of the chest by bandaging. The x-rays may be of value in enabling the surgeon to recognize rheumatoid arthritis; bone and joint tuberculosis. . . .; the amount of acetabular rim present in congenital dislocation of the hip joint; the state of the bone in a crushed limb; bone deformity; osseous tumors; bone displacement; osteomyelitis; caries; necrosis; and osteosarcoma. . . . The position of the fetus in utero can be definitely made out.

"Applied to the soft parts, the new process has obtained interesting but not as yet many practically useful results. . . . The shadow of the heart can be made out, and the outlines of the diaphragm, kidney and liver can be thrown upon the screen. If the stomach is distended with gas, it shows as a light area upon a dark background. If food is eaten after being mixed with subnitrate of bismuth, the outline of the viscus becomes fairly distinct. Thickened pleura, pleural effusion, pulmonary consolidation, abscess of the lung, pericardial effusion, aortic aneurysm; cavities in the lungs, and atheromatous blood vessels may be made out with more or less distinctness. If a sinus is injected with iodiform emulsion, a picture of it can be taken."

Thus, briefly, the scope of x-ray examination included those lesions characterized by the presence of an opaque foreign body or some injury to a bony structure; and even in these cases the value of the new process was not always sufficient to warrant reliance upon the method.

Twenty-five years ago the applications of radiology except in the hands of a very few radiologists, were almost exclusively in the domain of surgery; internal medicine had not yet begun seriously to take advantage of the developments of diagnostic radiology, in which, especially in the field of heart and lung diseases, our colleagues on the program of today, Varney, Crane and Hickey, were privileged to be pioneers. Dr. Crane has been too modest to tell you that his paper on "Skiagraphy of the Chest" not only was one of the very earliest comprehensive publications on the subject, but constituted a classic concerning which even today, with all the developments of a quarter of a century of inten-



sive study, very few criticisms can be made.

The gastro-intestinal tract was, in this twelve hundred page surgical text-book of 1903, dismissed with thirty-six words relating to the fact that the outlines of the stomach could be demonstrated after gaseous distention or the administration of some bismuth subnitrates. What a wonderful achievement in medicine and surgery has been the unfolding of the possibilities of radiological diagnosis in the last two and a half decades!

As to foreign bodies, one has only to consider the Great War with its millions of foreign body localizations and extractions by methods so numerous that more than two hundred localizing procedures were published during the first three years of the conflict, to realize what a boon to mankind has been this earliest application of the Roentgen rays. And to the list of opaque foreign bodies formerly discoverable have been added a number of non-opaque invaders of the human organism, such as non-opaque concretions in the alimentary tract, such as trich- and phyto-bezoar, stercoliths, cholesterin gallstones, pure uric acid urinary stones, soft concretions in the appendix, and even some of the larger intestinal worms.

In fractures and dislocations, not only is it almost malpractice to attempt a complete diagnosis without the radiogram, but in therapy its use is indispensable in checking the correctness of the replacement. No modern surgical institution for the treatment of bone and joint injuries can be called complete which does not include provision for fluoroscopic control during the surgical manipulations, and frequent check at the bedside by portable apparatus.

In the field of gastroenterology and urology, the unfolding of diagnostic radiological possibilities has taken place mainly through the placing of opaque media within the viscera under study. In this development several important eras may be noted. The first one, beginning as far back as 1897 with the work of Cannon and Williams, was characterized by the introduction of the opaque meal in gastrointestinal diagnostics, although six years later general appreciation of the wonderful potency of this means in gastrointestinal diagnosis had advanced so little that thirty-six words sufficed to describe its value in a surgical text-book of more than half a million words.

In 1908, Voelcker and Lichtenberg pro-

posed the use of a 10 per cent solution of collargol for pyelographic work, thus marking the commencement of what may be termed the second great era in radiological diagnostics, with such great and rapid extension of the field that large text-books have been devoted to the one subject of the radiology of urology, notably the book by Braasch and the one by Young and Waters now in press.

The third era may be considered as that opened up by the publications in 1924 of Evarts Graham and his associates on visualization of the gallbladder by the administration of halogen compounds. From the twelve-word statement of 1903 that "most observers state that gallstones cannot be skiagraphed in the living body," we now have an eight-hundred-page book on the gallbladder with special reference to the applications of cholecystography. Instead of frank inability to skiagraph gallstones in the human body we now find striking radiographic evidence of the presence of stones or of gross and serious gallbladder disease in 95 per cent of cases of cholelithiasis. And by way of excluding cholelithiasis, I have found that a statement, based upon careful cholecystographic study after intravenous injection, that gallstones cannot be found or that the gallbladder shadow is present, even though faintly, without filling defects due to stones, is worth 95 per cent toward ruling them out.

Another epoch in radiological diagnosis was dependent upon the fact that air or gas is easily discerned with the Roentgen ray. At first, one used the air or gas naturally present, thus studying the trachea and the lungs, gas abscess and gangrene, gas or air collections in the larger body cavities, as the sinuses, spontaneous pneumoabdomen; but soon advantage was taken of the introduction of air or gas to produce artificial pneumothorax, artificial pneumoperitoneum, ventriculography, encephalography and myelography, and even occasionally the injection of air or gas into articulations, especially the knee joint, to demonstrate otherwise invisible lesions, such as loose cartilages. Certain dangers attend the latter procedure and it is nowadays seldom resorted to. The detection of spontaneous gas collections has led to some of the most spectacular triumphs in radiology, such as the diagnosis of subphrenic gas abscess, intra- and sub-hepatic abscess, pancreatic abscess, chronic ileus, post-operative ileus, gas bacillus infection in traumatic wounds, and the rec-

ognition of perforation of abdominal viscera by detecting a small intra-peritoneal collection of gas.

Still another phase of radiological diagnosis was initiated by the introduction of iodoform, and later bismuth paste for the visualization of sinuses and fistulae. From the relatively limited uses of the earlier opaque pastes grew the present extensive employment of iodized oil in pulmonary, gynecologic and neurologic diagnosis, permitting complete opaque visualization of the bronchial tree and the detection of bronchiectatic cavities, lung abscess, bronchopleural fistulae, pulmonary and pleural tumors; improved accuracy of gynecologic diagnosis, especially differential diagnosis; and in neurology the exact localization of spinal cord tumors, and their differentiation from meningitic processes. Iodized oil instillations have also served a useful purpose in extending the field of rhinological diagnosis, especially in the identification of thickened membranes, polypi and other tumors of the nasal accessory sinuses.

To me, the most interesting chapter in the story of the development of the diagnostic use of the x-rays has related to the digestive tract. I am not one of the veterans of radiology like Dr. Varney, Dr. Crane and Dr. Hickey, who are charter members, so to speak, yet it has been my privilege to have participated in the development of digestive tract roentgenology almost from its incipency. In 1904 I spent considerable time in our primitive x-ray room, with a static machine repeating the classical experiments of Cannon on cats. At that time, I first used the opaque meal of bread and milk with bismuth subnitrate. In spite of generous feedings, I soon lost the friendship of the first feline participant in my experimental work. She was tied, back down, in a photographic plate drying rack during the fluoroscopic observations. On one occasion she let her tail drop through the groove in the bottom of the rack to come in contact with the high tension current, with somewhat startling effects.

From those humble beginnings we have participated in the unfolding of one of the modern miracles. It is now possible to differentiate successfully between diverticulum of the pharynx and esophagus, esophageal malignant disease and cardiospasm. Without the assistance of radiology, it was formerly only very rarely and with greatest difficulty that hernia of the diaphragm was recognized, whereas

today, hernia and eventration are differentiated, and it has become almost a commonplace matter, thanks to x-ray guidance, to intubate the esophagus, the stomach and duodenum and even the small bowel.

In gastric disease, Dr. Richard Cabot has declared that the roentgen findings are worth more than all the other laboratory diagnostic means combined. Moynihan declares "it is hardly too much to say that we owe almost everything" in the diagnosis of gastric disease to radiology; and he does not doubt that "more errors have been made in the diagnosis of gastric ulcer than of any other disorder. Its symptoms are mimicked with so much accuracy by other diseases that it is not only the unwary who are deceived. Radiology has put most of this right, and has explained the cause of the so remarkable plagiarism by those other diseases which arouse gastric symptoms." And, further, it has been not only diagnostic errors, but faulty therapeutics, which have been largely corrected through the aid rendered by x-ray studies and control. It is not too much to declare that in no case may a diagnosis of gastric ulcer be based upon clinical evidence alone. Radiological confirmation must be secured before one is warranted in proceeding with treatment, either medical or surgical.

And yet, there are dangerous pitfalls in the radiological diagnosis of gastric ulcer; small ulcers, especially when located on the posterior wall high up, offer the greatest difficulties. Differentiation must be made between congenital diverticula of the stomach which are prone to occur near the cardia and diverticula of the duodenum, especially those occurring near the duodenojejunal junction. Careful employment of some of the refinements of fluoroscopic palpation, taking advantage of our knowledge of the radiological appearance of the mucosal folds of the gastric lining, should help to avoid error even in these more difficult cases; so that the accuracy of the roentgen method is easily greater than that of any other diagnostic method in gastric ulcer. In duodenal ulcer this accuracy is still further enhanced. Both medicine and surgery owe much to the patient pioneer work of some of our American radiological colleagues.

Of course, we are constantly reminded of the frailty of human service by the radiological diagnostic failures which are usually heralded with much pomp and ceremony; but these are not so much er-



rors of the x-ray as of the x-ray worker, who through haste, or inexperience, or lack of appreciation of the clinical aspects of the disease he is endeavoring to investigate, errs in his application of the rays or his interpretation of their findings. And on the part of the surgeon there is too often a ready acceptance of the radiologist's findings, without sufficiently careful scrutiny of the latter's right to such implicit confidence on the part of his colleagues. It is a fact that the amazingly rapid development of digestive tract radiology and the naturally widespread desire on the part of physicians and surgeons to take advantage of its aid, have resulted in a situation where the demand for competent digestive tract radiologists far exceeds the supply; so that there are very many physicians endeavoring to specialize in radiology and report on the radiological findings in digestive tract examinations who are not yet sufficiently fitted by training or experience for that responsibility. They need the encouragement and collaboration of their colleagues to avoid the "lamentable examples of mischievous and meddling surgery practiced upon those who are erroneously arraigned as victims of digestive tract lesions in need of surgery."

The staff of this hospital with its wonderfully equipped and manned radiological department can hardly appreciate the importance of the foregoing statements, unless you recognize the truth of them in the pitiful and all too numerous examples brought to you in patients who have suffered needless, and tragically more than useless, surgical interventions on mistaken diagnoses. Hundreds of gastroenterostomies have had to be undone because the original diagnosis of duodenal ulcer or pyloric obstruction was erroneous. As a famous physician has said, there are two important facts to be recognized in connection with digestive tract diagnosis: all patients in whom an organic lesion is suspected should be sent to the x-ray department, as well as all patients about whom we have a doubt; and the radiologist should have plenty of time to work out his findings.

Some of the most spectacular phases of digestive tract radiology have concerned the recognition of diverticula of the intestine. Esophageal diverticula early fell to the radiologist's efforts, but duodenal, jejunoileal and colonic diverticula have only during the last fifteen years been a part of the radiologist's report. The

"mimicry of carcinoma" by colonic diverticulitis has resulted in our disillusionment concerning some of the reputed cures of carcinoma of the colon, operative or spontaneous. It is now recognized that even at the operating table, with his hands in the opened abdomen, the surgeon is often unable to distinguish between carcinoma and diverticulitis of the colon, whereas the radiologist, given a little time, will almost surely work out demonstrable proof of one or the other condition. There are some exceptions where the two lesions co-exist, and, in these, differentiation may be impossible without resection of the mass, a surgical task not always capable of performance. Truly miraculous has been the subsidence and final disappearance of a large sigmoidal tumor, so much feared as a malignant development, in not a few cases of colostomy for the relief of obstruction. Sigmoid diverticulitis has mimicked not only sigmoidal carcinoma, but also appendicitis, duodenal ulcer and gallbladder disease, as well as numerous pelvic affections, such as cystitis, acute tubo-ovarian disease, and pelvic peritonitis.

In the diagnosis of colonic carcinoma the radiologist must overcome many obstacles. Pitfalls are numerous: spasms, stercoliths, pedunculated benign growths, overlapping of intestinal loops hiding certain segments of the bowel, and the sometimes misleading appearances in connection with normal motor behavior of the colon. Yet the radiological findings, which, here as elsewhere, should be correlated with the clinical and other laboratory evidence, should permit a very high degree of accuracy of recognition of colonic malignant disease long before the development of obstruction or a palpable tumor.

Some years ago, in the earlier days of gastrointestinal radiology, yet long after the specialist should have become perfectly familiar with the possibilities of x-ray investigation in his field, was read a paper by a prominent internist on the early (*sic!*) diagnosis of cancer of the stomach, the principal points brought out by him relating to the finding of blood in the stool or vomitus; vomiting characteristic of pyloric obstruction, and the presence of a palpable tumor. One of our American leaders in radiology who was asked to discuss the paper remarked that instead of the early signs of gastric carcinoma, the speaker had been describing the symptoms of an impending postmortem. How thank-



ful we should be that we are delivered from the difficulties of those days!

Limitations to the usefulness of radiological help to the surgeon have been hinted at from time to time in the foregoing remarks. It should be recalled that after all, the radiological aid is but one, though a very important one, of the clinical resources available to the surgeon. Particularly in the field of negative findings should the radiologist's opinion not always be considered as authoritative. His failure to find positive signs of disease should not lead us to reject at once and *in toto* the evidence furnished by other approved methods. Particularly in disease of the gallbladder the surgeon must be willing to act upon the conviction arrived at by other means in many cases where the radiologist fails to furnish confirmation rather than be "lulled into contentment and a dangerous inactivity, only to be roused by a very formidable catastrophe." Again quoting Moynihan, "if the careful clinician has made a diagnosis of cholecystitis or cholelithiasis, a report from the radiologist that gives it no countenance should be disregarded. And so it is with suspected malignant conditions of the large intestine. Though a radiological examination often affords the greatest help when confirmed with the clinical history, and with the daily search for occult blood, the earliest and most certain diagnosis of these diseases, after all, is made when the barrier of the abdominal wall is lifted away."

Permit me to devote a few words to the value of the x-ray examination in the control of post-operative treatment and the recognition of post-operative complications. For this a bedside portable x-ray equipment is a necessity in every well equipped hospital. Subphrenic abscess, post-operative ileus, pulmonary complications, particularly the differentiation of subdiaphragmatic conditions from pleural and lung complications, the control of the position of drainage tubes, are among some of the less usually recognized opportunities for bedside x-ray study.

And in research there is a wonderful field still almost untouched, regarding the immediately post-operative conditions of gastrointestinal motor physiology. A few publications have appeared on the subject, but most of them relate to end results rather than to the conditions which obtain while the patient is passing through the first few days of the convalescent period.

As for therapy, I need not attempt to

add to Dr. Varney's remarks. X-ray treatment is rated as one of the recognized surgical means in the management of malignant disease, though with its limitations. The radiotherapy department constitutes a haven of last resort for many surgical derelicts. True, in the treatment of malignant disease, too often the radiologist has seen the patient only in the extremity of his tragical experience, and little can be done. Sometimes pain is relieved, the patient put back on his feet and restored to a comfortable degree of activity and often of usefulness for a period of months or years. In occasional cases a veritable miracle is the surprising result of radiotherapeutic applications. Truly astounding is the melting away of certain lymphatic tumors even when of large size. The disappearance of pain is often immediate and of long duration. And sometimes we see what may be truly considered as cures.

For instance, I have in mind the case of a woman sent to me about sixteen years ago, only a week after operation for removal of a part of a malignant goiter—just enough to take the pressure off the trachea. That patient is alive and well today, although seven years ago I operated on her again for radical removal of a scirrhus of the left breast. Both operations were followed by systematic and thorough application of radiotherapy, with the result that the patient is today free from any recognizable signs of malignant disease. The massive thyroid enlargement entirely disappeared within a year, and thyroid activity as measured by the estimation of the basal metabolic rate is within the normal limits. The diagnosis of both lesions was confirmed by several pathologists of international reputation.

I recall also a case of carcinoma of the anterior lip of the cervix, with an ugly, foul, necrosing, bleeding tumor, five or six centimeters in diameter, extending well onto the anterior wall of the bladder, treated seven years ago with a combination of cauterization and radiotherapy. Dr. Warthin was given biopsy specimens from time to time during the course of the treatment. His reports are extremely interesting, showing the gradual diminution in number of the malignant cells, with the progressive development of connective tissue encapsulation of the few remaining attenuated signs of cancerous disease. The patient, though now suffering from marked interference with the return circulation in one leg, a recent development,

has enjoyed nearly seven years of reprieve from a cancer death, years of splendid useful activity.

And in the field of benign lesions, there is a large opportunity for radiotherapy. In internal medicine there are the leukemias, except the acute; lymphogranulomatosis; the various types of adenitis; Banti's disease and certain other enlargements of the spleen; certain thyroid lesions; post-operative peptic ulcer; bronchial asthma; many forms of tuberculosis, including certain cases of pulmonary tuberculosis; perhaps pernicious anemia and polycythemia, though in the latter, drug treatment is supplanting the application of radiation therapy. I have also found the application of deep x-ray therapy useful in certain cases believed to be chronic pancreatitis, though I must say that several of these later proved to be pancreatic malignancy with its usual termination. In pediatrics, radiotherapy is useful for enlarged thymus and bronchial glands, abdominal and joint tuberculosis, whooping cough, and diphtheria carriers.

In surgery there is a large field of usefulness for radiotherapy in benign lesions: inflammations and suppurations, such as cellulitis, carbuncle, erysipelas, actinomycosis, parotid fistula, certain of the arthritides, bone and joint tuberculosis, tuberculous adenitis, peritoneal, intestinal and urogenital tuberculosis, keloids, and in some cases of prostatic hypertrophy.

Gynecological affections are in part amenable to radiotherapeutic management: many types of uterine fibroids, amenorrhea, oligomenorrhea, dysmenorrhea, metro- and menorrhagia, especially the excessive bleeding which so often occurs near the menopause. Many radiologists, especially in Europe, also recommend the employment of radiation in certain fields which I have not been able to accept, namely, to produce therapeutic abortion, in the treatment even of sterility, or, on the other hand, for the therapeutic production of sterility.

In the foregoing remarks, I have succeeded very imperfectly, I realize, in the task assigned me. The subject and the occasion deserve better treatment than I have been able to give it in the brief time allowed by my busy life. Surgery and surgeons are greatly beholden to radiology and radiologists. May they both remind themselves frequently that they are all primarily physicians, some "doomed to the practice of surgery," the others privileged to be pioneers in this still yet insufficiently

explored and developed field of radiology. Let both work in harmony, hand in hand, seeking in true scientific spirit in the name of humanity to advance the cause of medical science to which they have devoted themselves.

#### EFFECT OF PREVIOUS ADMINISTRATION OF ANTITOXIN AND TOXIN-ANTITOXIN ON SERUM REACTION

Previous injection of antitoxin serum seems not to affect future serum administration markedly, as almost as large a percentage of serum reactions occurred in patients not having received previous serum injections as in those so treated. Of the few patients seen by Sophie Spicer, New York (*Journal A. M. A.*, June 12, 1928), with marked serum reaction, none happened to have received antitoxin prior to the present illness, while those patients with a history of previous antitoxin, when exhibiting a serum reaction, had it in a mild or moderate form. Previous administration of toxin-antitoxin appears to have little or no effect on subsequent serum treatments. Only four of the twenty-eight patients in this series who gave a history of having been immunized against diphtheria with toxin-antitoxin had a serum reaction. This small series of cases seems to prove that toxin-antitoxin does not sensitize to future serum injections to such an extent as to produce any appreciable effect. The fact that these patients all had scarlet fever suggests the use of toxin-antitoxin, as persons once immunized against diphtheria with toxin-antitoxin are usually protected against that disease. The force of this is somewhat lessened by the fact that the patients with diphtheria were on the average younger than those having scarlet fever. The reason for the comparatively mild type of serum reactions may be the method of treatment.

#### NEW SERUM AIDS ALL TYPES OF PNEUMONIA

A new serum for treating pneumonia, developed by Dr. L. D. Felton of Harvard University, has given promising results in combatting this highly fatal disease. The serum marks an advance in that it can be used for all four of the recognized types of pneumonia, according to Dr. Russel L. Cecil of the Bellevue Hospital, who has obtained very efficacious results from its use in the pneumonia clinic of that hospital. It works best with types one and two, the two groups that comprise the majority of pneumonia cases. The recoveries after its use with type one have been very encouraging, indeed, Dr. Cecil declared, though the deadly type three which always has had a very high death rate has proved the least amenable of any group. Pneumonia serums used in the past have been specific for each type. Since certain laboratory procedures have to be followed out before the type from which the patient is suffering can be determined, precious time often has to be lost before the doctors know which serum to give. The Felton serum of mixed cultures can be administered on admission to the hospital and frequently a gain of many hours can be made in checking the course of the disease.—Science Service.



## MICHIGAN'S DEPARTMENT OF HEALTH

GUY L. KIEFER, M. D., *Commissioner*

### THE YEAR'S WORK IN MOUTH HYGIENE

The activities carried on by the Bureau of Mouth Hygiene for the fiscal year ended June 30, 1928, are shown in the following extracts from the annual report of that bureau. Though mouth hygiene is a more or less recent addition to the field of public health, its importance is very generally recognized.

"The chief aim of a public health dental program is the removal and prevention of mouth infection. This can be accomplished only by education and correction.

"Budget allowance would not permit the consideration at present of corrective clinics financed in whole or in part through this bureau, even if there were a place for such work in a state health program. Consequently our endeavor is confined to education concerning the prevalence and evil effects of mouth infection and the promotion of preventive measures and correction.

"As the bureau is new and the personnel confined to the director and a part-time stenographer, it will be recognized that organization, preparation of material and field work must all be done by one individual. Economy, therefore, as well as good policy, compels us to work through existing agencies as much as possible both in the department and in the field. As our work is closely related to that of the Bureaus of Child Hygiene and Public Health Nursing, and Education, we have sought and had most cordial co-operation from these divisions. In the field, we have had our chief contacts through the various school and public health nurses, teachers, dentists, parent-teacher associations, etc.

### FIELD WORK

"The director has not been able to fill all the requests for assistance in the field and has usually gone only where requests came from communities assuring cordial co-operation.

"Field work consists usually of a demonstration clinic, viz., a careful dental examination of one schoolroom in a locality with health workers, school officials and other leaders present; speaking before schools,

parent-teacher associations and other organizations; and conferences with dentists, teachers, nurses, and other health workers. In several places a lecture and demonstration was also given before county normals, and upon cordial request at the Michigan State Normal College at Ypsilanti. This gave an opportunity to reach a very important group—the prospective teacher.

"This program has been so much appreciated and the results so gratifying that we believe it presents the largest opportunity for constructive and far reaching accomplishments. Reports received during June, 1928, from about fifty public health nurses in the field during our suggested program and material in school work, shows that Marquette leads in the Upper Peninsula with 34 rooms using the dental honor roll. Of these, 17 had all corrections completed and 14 showed marked improvement. In the Lower Peninsula, Port Huron leads with 67 schoolrooms using the honor rolls. Fifty-two rooms had all corrections completed and all rooms showed marked improvement.

"The value of a clinic and reward is evidenced by the fact that both Port Huron and Marquette have a part-time school dentist, and in each the school board granted a half holiday to rooms having all corrections completed. This time is more than made up in improved attendance and scholarship because of better health after corrections are made.

"School authorities, physicians, and dentists who have not examined the mouths of school children have little conception of the appalling amount of mouth infection found there. The same is true of other groups beside school children, and there can be no question as to the desirability of reaching prenatal, preschool, industrial, and institutional groups in a dental health program. We are attempting to do something in these directions, but with our limited resources we are convinced that we will accomplish more by concentrating as much as possible on the school program at present.

"At the request of local dentists and leaders in the community, special attention



has been given Berrien County, where the field seemed ripe for a county dental program. This has resulted in the employment of a full-time school dentist for the past fifteen months whom we started in the field and who is doing an excellent piece of work that is receiving very favorable comment in the county. We believe that this is going to be an example of what co-operation upon a good dental program can accomplish.

"Berrien reports for the past year 12 schoolrooms with dental corrections completed in Benton Harbor, five in Niles, two in Berrien Springs, two in Coloma, and one in Three Oaks.

"We cannot pass over mentioning also the splendid co-operation which we are receiving from the Michigan State Dental Society. The Society is backing our program in a generous, whole-hearted, and material fashion which means much for the success of the work.

TABULATED REPORT

Number of places visited .....	125
Addresses given .....	137
(Adults 72, school 40, professional societies 25)	
Conferences outside office .....	145
Demonstration clinics .....	89
Number examined .....	3,382
Pamphlets distributed .....	208,029
Requests for pamphlets .....	1,505
School blanks distributed .....	57,872
Requests for school blanks .....	218

"A digest of school examinations that we have made in various parts of Michigan shows something of the situation in mouth hygiene. This digest follows:

DIGEST OF SCHOOL EXAMINATIONS

Group	No. examined	Percentage Needing Teeth Filled or Ext.	Percentage With Cavities In Perm. Teeth	Percentage Needing Ext. In Most Cases Infection	Percentage With any Fillings
Second Grades .....	1,087	86.9	49.8	52.3	19.0
Country Schools .....	523	81.0	47.0	42.0	12.2
Miscellaneous .....	2,431	77.0	45.8	37.0	22.4
Total .....	4,041	81.6	47.5	43.8	17.9

ACCOMPLISHMENTS IN ENGINEERING

The advance in sanitation throughout the state is shown in the annual report of the Bureau of Engineering, one of the oldest bureaus in the department. Extracts from the report follow:

"The number of filter plants has increased from 23 in 1926 to 28 in 1928. These plants serve 43 municipalities having a population of 48.6 per cent of the state's population. New filter plants are operating at South Haven, Grand Haven, Midland, Utica and Rockford.

"Fifty-three chlorination plants serve 55 municipalities having a population of 11.7

per cent of the state's population. Sixty per cent of the population of the state is supplied with water which receives treatment either by filtration and chlorination or by chlorination alone.

"A summary of the water supplies of the state corrected to June 30, 1928, is as follows:

Total number of public water supplies .....	331
Municipal ownership .....	291—87.9%
Private ownership .....	34—10.4%
Combined ownership .....	4—1.2%
State ownership .....	1—0.3%
Federal Ownership .....	1—0.3%
Ground water sources .....	209—63.2%
Population served .....	751,873
Surface water sources .....	112—33.8%
Population served .....	2,517,179
Ground and surface sources .....	10—3.0%
Population served .....	58,337
Filtration and Chlorination, 23 plants serving 43 municipalities.	
Population served .....	2,230,432
Chlorination only, 53 plants serving 55 municipalities.	
Population served .....	538,217
Total population of state .....	4,591,000
Urban population .....	2,846,420—62.0%
Rural population .....	1,744,580—38.0%
Population served by public water supplies .....	3,327,389—72.5%
Population served by treated water supplies .....	2,768,649—60.3%

MUNICIPAL WATER AND SEWER PLANTS

During the past two winters a complete inventory of the files of the municipal water and sewer plans was made. Based on these findings, a campaign was started through correspondence and visits, calling the attention of the city and village authorities to their duty of filing complete plans with this department. Revised public water supply and sewerage and sewage disposal questionnaires were sent to all cities and villages of which there was no recent knowledge concerning their water and sewer systems. Response to these inquiries was most gratifying. A total of 108 water system and extension plans and 190 sewerage system and extension plans were received and examined. As the result of this work our files at present are quite complete.

RAILROAD WATER SUPPLIES

The same procedure of inspecting water supplies and collecting samples from railroad sources was continued during the past two years. All Lower Peninsula supplies were inspected twice during the year while those in the Upper Peninsula and for the boats were collected once. When the first analysis on a supply was unsatisfactory, more inspections were made to locate the source of contamination and advice given the railroads for corrective measures.

"In 1928 a new procedure in collecting samples has been started. All municipal supplies that are under laboratory control are inspected and samples are collected

once a year. Those that are not under laboratory control, but as a result of our supervision are known to be safe, are visited twice yearly. The private sources owned by the railroad or by individuals and used by railroads are inspected and samples collected three times a year. The boat supplies are still collected once a year.

"In co-operation with the U. S. Public Health Service, beginning this year, our railroad water inspector visits railroad yards where pullman cars are parked to house people attending conventions, football games, and other large public gatherings, to inspect the sanitary conveniences relative to water supply and sewage disposal.

"During the fiscal year ended June 30, 1928, the railroads required 158 certificates for water obtained in 85 cities. This necessitated the collection of 332 samples of water. The supplies were classified as 65 municipally owned, six privately owned, and 19 owned by the railroads. The steamship companies requiring certificates numbered 32. These certificates were issued to cover 13 public supplies.

#### ROADSIDE WATER SUPPLIES

"The work of inspecting roadside water supplies started in 1925 has been continued. The progressive increase in percentage of safe supplies from 63.7 per cent in 1925 to 83.6 per cent in 1927 leads us to believe that much good has been accomplished. We can see no reason why the improvement in percentage of safe supplies has not been due very largely, if not entirely, to our work of testing and education.

#### SWIMMING POOL SUPERVISION

"In February, 1927, a circular was sent to the superintendents of schools of all the larger towns in Michigan, asking for information on the number and location of outdoor and indoor artificial swimming pools in their respective localities. Through this, and other means, we have obtained data on the locations of 138 pools, 40 of this number being located in the city of Detroit.

"Since that time, inspections of all indoor and several outdoor pools have been made, totalling 82 inspections. A swimming pool questionnaire was filled out for each pool, providing the Bureau of Engineering with complete and accurate data on the equipment available. There still remain 16 outdoor swimming pool inspections to be made.

"This constitutes the first attempt to

supervise the operation of swimming pools in the state. The increasing popularity of swimming has caused much discussion of the sanitation problems of pools, and our attempt to help solve these problems has been received with favorable comment. When all the pools have been inspected it is planned to formulate regulations covering operation and construction. These regulations will be made with the view of standardizing the use of equipment, and as the minimum sanitary standard for all pools.

"Inspections thus far have shown the need of state supervision. Most operators are interested in the care of their pools, but are handicapped by lack of knowledge concerning the proper use of the equipment.

"Most pools in the state use chlorine or one of its compounds for water disinfection. At these pools we have urged the use of mortho-tolidin testing set to determine the amount of residual chlorine carried by the pool water, thus eliminating the need of depending solely on bacteriological tests to determine the sanitary quality of the water.

"The 'fill and draw' type of pool is rapidly becoming obsolete. At one or two pools of this type, purification equipment is contemplated. The same may be said concerning the use of ultra violet ray machines for water sterilization. These machines are either being replaced or augmented by other means of treatment which assure results.

#### STREAM POLLUTION CONTROL

"Early in July, 1926, a representative of the Conservation Department, an assistant attorney general, the sanitary chemist and the assistant sanitary engineer of the Department of Health, went to the Upper Peninsula where a very careful and detailed inspection was made of all the paper mills, gas plants, chemical plants, and many of the milk handling plants. Conferences were held at Newberry, Marquette, Houghton and Crystal Falls similar to the one held at Lansing previously. At these conferences, 26 incorporated municipalities and 21 townships were requested to have representatives present. To them the problems of stream pollution were presented, and orders were later issued to 16 of the municipalities.

"At Newberry six chemical plants and eight dairy plants were represented, at Marquette four gas plants, at Houghton four dairy plants, and at Crystal Falls 14

dairy plants. With each of these industrial groups the problems of pollution created by their wastes was discussed and the relief measures outlined.

"The six months' period allowed the municipalities at the Lansing conference having expired, a check was made to see what progress had been made. It was found that of the 77 municipalities receiving orders, 23 had submitted reports, 17 had employed engineers, five required no reports, and 32 had taken no action.

"Letters were therefore addressed to 47 municipalities asking for a progress report. Similar letters were later sent to the industries. The results have been most gratifying. Only a very few of the municipalities have indicated that they do not intend to take any step toward relieving conditions created by their sewage, and on these it is planned to institute court proceedings at an early date.

"The experimental treatment plants operated by the tanning and canning industries were very successful and sufficient information was obtained to warrant their continuance through the second year. The tanning waste plant has handled all but the sludge problem and it is expected that by the first of September the experiment will have been completed, with an expenditure not to exceed \$4,500, an amount equivalent to three-fourths of the sum that the tanners expressed themselves as willing to pay on the experiments. Experimental plants handling pea, peach, tomato and strawberry wastes show progress, as does the work with butter and cheese wastes. Every paper mill in the state has made rapid strides in reducing the amount of fiber going into the streams and it is now common practice among them to show less than one-fourth pound of fibre loss per 1,000 gallons of waste. The question of what to do with the sulphite liquor still remains the big problem of this industry.

"At the present time records in the department show that municipalities ordered to start work on sewage disposal systems have responded in the following manner:

Reports submitted	54—69.4%
No report necessary	5—6.3%
Engineers employed	6—7.7%
Working locally on plan	6—7.7%
No action taken	7—8.9%

RURAL SCHOOL WATER SUPPLIES

"In November, 1927, a survey was begun of rural school water supplies. All rural schools in Ingham county and nearly half of those in Clinton county were vis-

ited before the weather prohibited the continuance of the work. Of the 156 schools visited in both counties, 85 per cent had safe tests. The work done in these two counties was experimental, to find out whether it was feasible to carry on the survey in other counties. We believe that this is a valuable activity, and the work will be continued when schools reopen.

PREVALENCE OF DISEASE

	July Report		July 1927	Average 5 yrs.
	Cases June 1928	Reported July 1928		
Pneumonia	453	186	171	171
Tuberculosis	554	270	489	555
Typhoid Fever	22	25	51	61
Diphtheria	332	210	255	295
Whooping Cough	658	789	661	682
Scarlet Fever	941	392	436	499
Measles	3,712	1,197	397	893
Smallpox	223	89	95	99
Meningitis	28	16	13	11
Polioomyelitis	3	1	6	6
Syphilis	1,563	1,085	1,346	1,139
Gonorrhea	981	740	750	897
Chancroid	7	10	4	12

CONDENSED MONTHLY REPORT

Lansing Laboratory, Michigan Department of Health				
July, 1928				
	+	—	+-	Total
Throat Swabs for Diphtheria				1011
Diagnosis	35	219		
Release	40	160		
Carrier	15	527		
Virulence Tests	6	9		
Throat Swabs for Hemolytic Streptococci				771
Diagnosis	105	124		
Carrier	129	363		
Throat Swabs for Vincent's Syphilis	38	216		254
Kahn	1032	6085	24	7143
Wassermann		2		
Darkfield				
Examination for Gonococci	140	1264		1404
B. Tuberculosis				411
Sputum	61	303		
Animal Inoculations	1	46		
Typhoid				143
Feces	3	38		
Blood Cultures	2	37		
Widals	5	46		
Urine	1	11		
B. Abortus	6	48		54
Dysentery				37
Intestinal Parasites				20
Transudates and Exudates				205
Blood Examinations (not classified)				106
Urine Examinations (not classified)				331
Water and Sewage Examinations				887
Milk Examinations				85
Toxicological Examinations				6
Autogenous Vaccines				10
Supplementary Examinations				112
Unclassified Examinations				521
Total for the Month				13511
Cumulative Total (fiscal year)				13511
Increase over this month last year				1406
Media Manufactured, c. c.				123918
Typhoid Vaccine Distributed, c. c.				1770
Diphtheria Antitoxin Distributed, units				20732000
Toxin Antitoxin Distributed, c. c.				7660
Silver Nitrate Ampules Distributed				4476
Examinations Made by Houghton Laboratory				1597
Examinations Made by Grand Rapids Laboratory				6104



# THE JOURNAL

OF THE

## Michigan State Medical Society

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SEPTEMBER, 1928

*"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."*

—Francis Bacon.

## EDITORIAL

### THE 108TH ANNUAL MEETING

The Michigan Territorial Medical Society had its beginning in 1821. It is considerably over a century since the first getting together. Remember the date of the 108th annual meeting in Detroit, September 26-28. The program has been published. It is complete, rich and varied in interest. Attention is directed to the reports of standing committees which occupy the major portion of this number of the Journal.

In addition to the scientific papers which will be presented, there will be clinics at various hospitals. In keeping with the post-graduate idea every effort has been put forth to make the program helpful to all concerned.

It is hoped that the attendance will be large. The weather will doubtless be more comfortable than it is as these lines are being written. Detroit is well supplied

with good, comfortable hotel accommodation.

### SOME MEDICAL PROBLEMS

The present state medical society dates back but a few years. Before the re-organization (1902) there have been several years at a time when there has been no annual meeting of Michigan physicians. A little over a hundred years ago a medical society was started in Detroit. This medical organization three years later presented Lieutenant William Beaumont with Honorary membership for his epoch making paper on researches in gastric digestion. The territorial medical society of Michigan had extensive power, namely to examine applicants, grant and revoke licenses to practice medicine. Later this power was taken away and for many years Michigan had no legislative restrictions regulating the practice of medicine.

In 1889 was passed the Chandler Medical Act and the power of licensure was placed in the hands of the Michigan State Board of Registration in Medicine, composed of ten physicians. This board for the last five years has admitted 1,550 physicians to practice (300 a year) which would seem to be an ample supply of new doctors. It is but rarely, however, that one of them enters practice in a small community. The National Grange claims that pre-medical and medical standards can be lowered and that physicians will then locate in rural communities to relieve dearth of doctors. There are various reasons why physicians will not locate in the small community. If the rural community can stop the emigration of its own young people to the city and can offer better schools for the doctor's children, better facilities to practice his profession and will support him financially so that he can work satisfactory to his standard of practice, the problem of the better distribution of physicians may be solved, and not before. A lower standard will not solve the problem, because the farmer and his family are more observing and critical than are their unsophisticated brother in the city. The faker or the poor doctor does not last long in a rural community because news travels fast in the country. A poorly trained doctor is probably the most dangerous man in any community.

\* \* \*

There is the problem of the irregular practitioner limiting his treatment to a single principle of the healing art, the medical profession believes that he should

at least possess a good general education. Below a certain level he is a real menace to a community because of his ignorance. He either cannot recognize contagious disease or denies its existence. We believe that the more education he has the less likely he is to take up a passing fad which can only have a possible service in a very limited field. The essential part of successful treatment is a correct diagnosis and one is unable to do this unless he has been thoroughly trained in the broad field of medicine. Otherwise it is pure imagination or routine guessing. A fall in attendance from several thousands to 200 in a year is evidence of the final disappearance of one such school. But new schemes will take its place. Abram's electronic apparatus, although it had no electric energy of any sort according to reports of electrical engineers, has gone into the discard along with the oxydonor and the electric pads and belts.

\* \* \*

The public and the medical society is confronted with the problem of protecting innocent victims from the ignorant and ill trained practitioner of the healing art. The various cults and schools would like to have the same standing and use the term doctor to fool their dupes. Florida has recently had an exhibition of osteopaths being admitted to the same standing as doctors of medicine and it is said they will control the next state board of health in that state. Kentucky has recognized the chiropractor.

Michigan, too, has the same task as other states of purging from its midst the unscrupulous charlatan and montebank.

\* \* \*

Some of our problems lie within the medical profession. When 35 per cent of the doctors in most of our cities are practicing a specialty and 40 per cent of our recent graduates at once limit their work to a specialty and 40 per cent more are working to become specialists we cannot be said to be meeting the demands of the public. No one should be a specialist until he has laid a firm foundation in general practice. It is exaggeration to claim that medicine is so extensive that no one can cover the entire field. There are certain essential and fundamental truths in medicine that must be mastered before one should enter even a limited field.

A recent investigation in Chicago shows that the majority of people do not go to a doctor when they think they have a minor ailment. This perhaps has grown out of

the indifference, lack of attention or sympathy of the doctor in taking care of these cases. Especially is this true in cases of fear. The patient is bound to go where he will receive attention.

In the campaign for urging annual health examinations we found not a few physicians have pooh-poohed their patients, slapping them on the back and without any examination whatever stating that everything was "O.K."

In seventeen towns it has been found that physicians' house calls were lower, than the taxicab fare to the same homes. The physician is imposed upon by life insurance companies for reports in which he may have treated the patients years ago. At times this entails quite an extensive search of records but I have failed to hear of a single company who even intimated that these reports were of great value to the company.

Thirty-four of our universities are teaching their students to expect almost free medical service while they are students at their university. University clinics also cater to the pay patient to help balance the financial books. We believe the principle is wrong of educating doctors and then entering into competition with them. Medical colleges need patients only for instruction of students and the humanitarian principle of helping those who have been unfortunate in the struggle of life. The University of Chicago recently, after a conference with a committee from the Cook County Medical Society, abandoned their proposal of a pay clinic in connection with the medical college.

And finally note this from the Journal of A.M.A.: "Alberta Offers Operations at Cost Price.—George Hoadley, minister of health of Alberta, in addressing a meeting at Calgary during child welfare week, stated that the traveling clinic which he had organized had visited 2,346 patients, examined 10,270 school children and visited 385 schools, and that of the 122 places desiring its services the clinic had visited 44. According to the Journal of the Canadian Medical Association, he emphasized the fact that operations can be had at cost price which is much lower than is made by physicians throughout the province."

—H. E. Randall.

#### SEASICKNESS

Seasickness has been ascribed to so many causes, and so many remedies have been suggested that it still remains one of

the obscure conditions so far as any exact etiology is concerned. The very name has been associated so long with ocean voyages that many precise people apparently feel that to become nauseated on board ship is the proper thing to do, just as two or three generations ago it was the proper thing in polite society for young women to faint, with the ever present bottle of smelling salts as a remedy.

Bennett in the *British Medical Journal* thinks much of seasickness could be prevented by autosuggestion which should be practised at least a week before sailing. The writer, however, advises light meals during this period with abstinence from meat. Another writer advises the oral administration of glucose, his *modus rationis* being, that the effect of the motion on the labyrinth is to produce a deficiency of blood sugar which in turn causes the nausea and other symptoms associated with seasickness. Nerve sedatives have been advised. Some ship doctors pin their faith to atropine.

There is no doubt, however, that good ventilation acts as a preventive to a great extent. Sanitation on board ship has greatly lessened both morbidity and mortality on sea voyages.

Contrast modern sea-faring with the following picture by a German passenger who made a voyage to Pennsylvania in 1750. The journey lasts fully a half a year.... During the voyage there is on board these ships terrible misery, stench, fumes, horror, vomiting, many kinds of seasickness, fever, dysentery, headache, constipation, boils, scurvy, mouth-rot and the like, all of which comes from old and sharply salted food and meat, also from very bad and foul water so that many die miserably.... Misery reaches the climax when a gale rages for two or three nights and days so that everyone believes the ship is going to the bottom.... When in such a gale the ship is tossed from side to side by the storm and waves, so that no one can either walk, sit or lie and the closely packed people in their berths are thereby tumbled over one another both the sick and the well—it is readily understood that many of these people, none of whom had been prepared for hardships, suffer so terribly from them that they do not survive it.... Many hundred people necessarily die and perish in such misery, and must be cast into the sea.

### CARDIAC MURMURS\*

Sir James Mackenzie was one of the first of the modern group of cardiologists to call attention to the fact that too much emphasis was being laid on the presence of valve murmurs. The result has been that, in many cases, the physician has been content to entirely ignore them, which is a much graver error than the other. Life insurance companies, from long experience, have come to the conclusion that abnormal heart-sounds have a distinct bearing on the morbidity and mortality of their risks and some companies refuse to take, at standard rates, any applicant who is the possessor of any type of heart murmur. That caution is necessary in cases in which so-called functional murmurs are present, is well illustrated in a personal case, seen about ten years ago, the patient having been referred for mitral insufficiency. He was a man who was a life insurance agent and who had, a year prior to this, received a considerable increase in insurance. On first thought, on account of his peculiar lemon-yellow appearance, the diagnosis of pernicious anaemia was made, which was confirmed by the blood-findings. The course of the disease being very rapid, he died about six weeks later. In this particular instance, the presence of the murmur indicated something, it was true, of importance in the heart but something of far greater importance in the general system.

\* \* \*

Mackenzie's classification divides valve murmurs into three classes: physiological, functional and organic. The physiological are the ones in which murmurs are present but there is no reason to believe that there is any form of pathology. Such are illustrated by those patients in whom particular postural changes cause the appearance or disappearance of the murmur. By functional are meant those forms of heart murmur which are due particularly to myocardial pathology, such as relative insufficiency, due to dilatation of the mitral ring. The organic murmurs are due to structural changes in the valves themselves. It has for years been my personal contention that murmurs are always of importance, just as in ordinary life, a knock in a motor is important. It is up to the physician to determine whether any serious pathological condition is present. A heart normally situated, normally sur-

\* Cardiac murmurs by James Orr, physician at The James Mackenzie Institute for Clinical Research, St. Andrew's, Scotland, in the July 1928 number of the *Canadian Medical Journal*.



rounded and normally functioning should not be productive of any cardiac murmurs; therefore, it is the duty of the physician to determine what these murmurs represent and of how much importance they are in causing changes which will impair the cardiac function.

\* \* \*

Orr properly gives most of his space to diastolic murmurs, which as he states, are usually organic. This is not necessarily so, however; in our experience years ago, we had an old alcoholic case, in which marked systolic and diastolic murmurs, the systolic at the mitral and the diastolic at the aortic valve, confirmed by peripheral findings, made us reach the diagnosis of aortic and mitral insufficiency. On autopsy, there was fatty degeneration of the cardiac muscle and the valves were all in perfect condition, so that these murmurs were evidently of the relative type. It is true, however, the majority of these represent organic changes. The diastolic murmur of aortic insufficiency is usually recognized, although at times it requires careful consideration of the case and the study of vascular changes. In a case seen a few days ago, a diagnosis of aortic insufficiency had not been made, although the diastolic murmur was present, replacing the aortic second sound, yet not readily appreciable; there was pistol-shot sound in the brachial, capillary pulse and the pulse-pressure was moderately increased, that is to say, 60 mm. mercury.

\* \* \*

The diastolic murmur, however, of mitral stenosis is far more interesting because it remains throughout the variety of changes likely to take place in this disease; even when auricular fibrillation supervenes, as it so often does, the diastolic murmur persists and it often is present when there is no definite presystolic murmur, so that it is the most valuable single auscultatory sign in the diagnosis of mitral stenosis. He mentions the fact that with mid-diastolic murmurs, heart block is usually present. Systolic murmurs are not particularly emphasized by him, as he has evidently been convinced by data presented by Dr. Cabot in his book, "Facts on the Heart", that mitral insufficiency is a rare disease. We do not believe, however, that many clinicians are of this opinion and that clinically, at least, we see more cases of mitral insufficiency than of mitral stenosis. That, in any of these cases of mitral insufficiency, there

is considerable thickening of the valve, so as to offer some obstruction to the blood-flow, might be granted but the main change in the blood-flow is in the fact that regurgitation is present; that is, that insufficiency is the preponderating factor in the cases.

Systolic murmurs of a rough character, present in the aortic area, do not necessarily mean stenosis and can only be certainly diagnosed when associated with examination with the polygraph. In some of these cases, although there is a very rough type of murmur, a normal pulse-tracing is found; it is only where a plateau pulse is found in both left and right radials that a diagnosis of aortic stenosis is warranted.

Walter J. Wilson.

#### THE RETIRING PRESIDENT

We take this opportunity to pay our respects to Dr. Herbert E. Randall who will be the immediate past president of the Michigan State Medical Society before the next number of the Journal comes out, when we will be able to announce his successor. Dr. Randall has proven himself an efficient executive. While the presidency of a State Medical Society is looked upon by a great many as an honorary position, it is becoming less and less a sinecure if it ever could have been called such. It marks the culmination in Dr. Randall's case of many years of faithful service to the profession of Genesee county and to the state as well.

Dr. Randall after graduating from the Detroit College of Medicine was assistant to the late Dr. H. O. Walker, a name well known to the older members of the profession. For sixteen years Dr. Randall was a partner to Dr. W. J. Kay of Lapeer, Mich. He has held a number of hospital appointments in Flint; has seen service abroad as Chief Surgeon of Base Hospital No. 36, at Vitell, France. It is almost needless to say that he is a member of everything in the way of medical societies from his own Genesee County Society to the American Medical Association. During the past year Dr. Randall has found time to be present at a large number of medical functions in the way of Society meetings and conventions all over the state. Unobtrusive in nature the doctor's career as President of the Michigan State Medical Society has been one of quiet activity and he relinquishes the office with the gratitude of the Society for work well done.

## RETRIBUTION

A peculiar medical-legal case has come to light in the State of Massachusetts which has resulted in the suspension of a surgeon's license to practise for one month, and that of a general practitioner for three months. The general physician called in the surgeon in consultation over a patient with a very serious disease. The two decided on surgical treatment with the result that the patient died of surgical shock the day following the operation. Before the operation the patient was induced to assign his bank account to the physician. After the patient's death the physician went to the bank and withdrew money from the patient's account without informing the bank officials that the patient was dead. It was agreed between the two doctors that the surgeon should be paid \$1,000, which amount was paid. The entire estate of the patient was \$3,250. The matter was brought before the Board of Registration in Medicine with the result that the aforesaid suspensions of both doctors were decided upon by the Board. An appeal was made from their decision to the Supreme Judicial court which tribunal sustained the Board of Registration in Medicine.

Once in a great while a member of the profession will allow his greed for gain to overcome moral scruples, which he evidently does not possess. Be it said to the honor of the medical profession that such instances are very rare in which a physician or surgeon takes advantage of a deceased patient's estate be it large or small, and so long as Boards of Medical Registration take the viewpoint of that of the Massachusetts, the medical profession as well as the public are safe.

## EDITORIAL NOTES

This month the leading editorials are by the president of the Michigan State Medical Society, Dr. H. E. Randall, and by Dr. Walter J. Wilson. This is the last number of the Journal before the annual convention which takes place in Detroit this month, as announced. Dr. Randall has taken occasion to call the attention of the profession to some of the problems it must sooner or later consider. Dr. Wilson comments on the evaluation of heart murmurs. Dr. Wilson has confined his attention to

cardiology over a number of years and is thus entitled to speak on a somewhat technical subject. The editor takes this opportunity of thanking both these editorial contributors.

The term quack dates back to the time of Paracelsus (1491-1541) whose followers were known as Quacksalbers or simply quacks. Mercury appears to have been the chief drug used by this cult; hence the name was derived from queckselber or quicksilver. The term "quack" has also been explained as a shortened form of Quack Salver from the custom of using "salves", the "quack" having its origin in the kakaphoniou utterance of a duck. This explanation is inspired by the wholesale raid upon the "quacks" of this state by the state police.

The annual meeting of the Upper Peninsular Medical Society was held at Newberry Wednesday and Thursday Aug. 1 and 2. The registrations numbered 61. The scientific sessions were held during the afternoons. The papers were of excellent quality. They will constitute the contributed articles of a future number of this Journal. Among those present not residents of the Upper Peninsular were Dean Hugh Cabot of the Medical Department of the University of Michigan, Dr. George McKean, Dr. C. F. McClintock of Detroit, Dr. H. E. Randall, President of the Michigan State Medical Society, Dr. Guy L. Kiefer, Commissioner of Health, Lansing, Mich., Dr. Crulee, Chicago, and the editor of the Michigan State Medical Society Journal.

## NEWSHOLME NUGGETS\*

It is largely through study and disease and its treatment that knowledge of its prevention has come.

Individual disease is, furthermore, a fruitful cause of disease and incompetence in others, either by infection, or as the result of the destitution which so often results when disease occurs in one member of a family.

A romantic and most important chapter in the history of health is that dealing with health in relation to food and drink, including alcohol.

An erroneous doctrine strangles investigation and original thought; and the history of medicine is strewn with wreckage showing unnecessary suffering due to delay in the study of the natural history of disease and of the collateral biological sciences.

\* From *Evolution of Preventive Medicine* by Sir Arthur Newsholme. Published by the Willilams and Wilkins company, Baltimore.

As in other branches of knowledge, orthodoxy has been the bane of progress in medical science, though each new error has usually embodied some element of truth and has perhaps formed a necessary stage in the slow evolution of knowledge.

The first man was the first doctor, and probably also he was the first obstetrician.

Herodotus states that although among the Babylonians the chief doctors were the priests, the Babylonian sick were often brought out into the market place to elicit the views of passers-by as to their treatment.

In the ancient world and right through the Middle Ages of the Christian era, the belief in the supernatural origin of disease persisted, and no real advance was possible in medical or general science so long as this belief dominated mankind.

Before Harvey the vascular system was regarded as a source of supply by irrigation, there being no conception of a circular movement of the blood except partially as regards the lesser or pulmonary circulation.

As infection from without is the source of the main disease of mankind, the growth of our knowledge of infection forms a supremely important part of the history of preventive medicine.

### HOW IT AFFECTS THE OTHER FELLOW

(Atlantic Medical Journal)

Destructive criticism in the ranks of the medical profession is, of all things, most condemnable; a wise look, a shrug of the shoulder, or a shake of the head may be sufficient to incite a suit for alleged malpractice. Many of the cases which reach the courts are the result of the inference of physician number two, who looks at some deformity and suggests that "the treatment, of course, was so and so." Innocently he stirs up the thinking machine of the patient, who now recalls that his doctor did not treat him as this wise one has suggested, and the next thing is a suit for alleged malpractice. May all who read this article think well before expressing an opinion or even suggesting a plan of treatment when consulted by a patient formerly under the care of another physician or surgeon. It is so much easier to congratulate the individual on the results secured for him by his attendant. This will help to preserve the good feeling that the patient had for his former attendant, instead of poisoning his mind against one who did the best that could be done for the injured person.

"Do unto the other fellow as though you were the other fellow."

### AD LIBRUM

Go, tell them what thou bringst exceeds the wealth

Of all these countries for thou bringst them health.

Drink not much wine, sup light, and soon arise.

Use three physicians still: first Doctor Quiet,  
Next Doctor Merryman, and Doctor Dyet.

Rise early in the morn. . . .

Both comb your head, and rub your teeth likewise.

Long sleepe at after-noon by stirring fumes,  
Breeds Slouth and Agues, Aking heads and Rheums.

Wine, women, baths, by Art or Nature warme,  
Us'd or abus'd do men much good or harme.

Scorne not Garlicke, like to some that thinke  
It only makes men winke, and drinke, and stinke.

This little poem is said to have been written for the son of William the Conqueror. From *Evolution of Preventive Medicine* by Newsholme.

### THE LAST OF ALL

Whether it's Heaven—or whether it's Hell—  
Or whether it's merely Sleep  
Or whether it's something in between  
Where ghosts of the half-gods creep—  
Since it comes but once—and it comes to all—  
On the one fixed, certain date—  
Why drink of the dregs till the Cup arrives  
On the grey day set by Fate?

One by one till the line is passed—  
The gutter-born—and the crown  
So what is a day—or a year or two—  
Since the answer's written down?  
What is a day to a million years  
When the last winds sound the call?  
So here's to the days that rest between—  
And here's to the last of all!

—Grantland Rice, in  
A Physician's Anthology of  
English and American Poetry.

### POST GRADUATE CONFERENCE ANNUAL MEETING\*

Very little could be added and certainly nothing could be subtracted from the unusually interesting and instructive program as arranged by Dr. W. J. Kay and Dr. Zemmer, President of the Lapeer County Society. It was successful from point of interest, at least, such was the unanimous decision of the seventy-one members who attended the meeting. Indeed, St. David smiled; his sunshine called the members from their pills; and for those who left before the completion of the program he sent his showers of disapproval.

The meeting was called to order at 10.00 a. m. The papers were limited to one-half hour each. They were snappy and full of practical interest. Dr. Heavenrich, Councilor from the seventh district presided and in his opening stated that in his opinion the care of the feeble-minded child and the insane patient involves a greater burden than the care of those physically ill.

Dr. Randall prefaced his remarks with the statement that doctors have not paid sufficient attention to the mental disorders. It is said that there is more mental pain in the world than there is physical suffering and he thought that this was true. There are 96,000 in public schools today who will be committed to an institution some time in their life. These cases should be detected early by examining physicians that institutionalizing may be prevented and that they be improved through training at home. At the present time there are 70,000 feeble-minded in Michigan. Doctors should be more interested in the mental diseases for they see them at the beginning when most can be done.

\* Report of the Annual Meeting for current year of the Post Graduate Conference—Seventh District, Michigan State Medical Society, held at Michigan Home and Training School, Lapeer, Michigan, Thursday, June 28, 1928.



Mrs. Waterbury, director of the Welfare Department of the Michigan Home and Training School spoke on the subject of how a physician can aid the mentally sub-normal of his own community. Doctors examine the patients with the idea of having them committed to Lapeer. The court assigns to them the duty of saying whether they are feeble-minded or not. The physician could be very helpful to the institution if he would keep in mind that the problem of the feeble-minded is not only one of commitment to an institution but much more their adjustment in the home and community. The commitment is but the beginning. The return to the community with some training fitting them better to care for themselves is the next step. The statement that the doctor submits to the judge should not be: "She does not know her own age. She is not oriented; has no school knowledge; practically no general knowledge, or comprehension, and no moral sense." For while these are probably true and sufficient for the judge in making the commitment, for the best care of the child much more is required to be known in detail about their home, family, school life, community life and habits. If the rest of the family is similar to the patient that should be stated. It is necessary for the institution to have the background of the child's life and considerable about its activities to be able to do the best for the child in placement, training, vacations, and final disposition. No one is so well qualified as the family physician to give this information because he knows the history of patient and family background better than anyone else.

Dr. Wilson of the Michigan Home and Training School staff spoke on history taking. The personal family history blank as sent out by the institution was reviewed in detail and the importance of answering each question on the blank with the significance and purpose of each question was fully explained. An appeal to the general practitioner was made that he co-operate more fully and carefully in this respect.

Dr. W. J. Kay, Superintendent of the Michigan Home and Training School spoke on the feeble-minded as a social problem. Only the higher types of the feeble-minded were discussed. Most people when thinking about the feeble-minded have in mind the idiot, but they are no problem in an institution—feed them, keep them clean and as happy as possible is all there is to it. They should be in a state institution for very few families are equal to the burden of caring for them. This is also true of the low grade imbecile. But a great number of those who by mental test will be named as feeble-minded are able to make a contribution to the community, are able to earn in part, or in whole, their living, if properly supervised; they need not be a liability but an asset to any community. The Michigan Home and Training School for this group is not a detention home, but it is a training school and its wards should have much the same status as the child going to a boarding school. It is the opinion of some that the child should be completely separated from its home. Dr. Kay does not accept this for if the home is but a very ordinary one, no institution is as good no matter how well organized. When a child leaves a community the community has something to do in correcting the conditions that resulted in the break-down of the child. This should be done in a very positive way so that if the home needs improving it will

have had time to get familiar with the change before the child comes back.

It is not conceivable that the state can care for during their whole life time the number of this type that is committed, therefore, the absolute necessity for their returning to the community and the necessity for the community beginning early to prepare to receive them. What success we have with them in training is because we attempt to understand them and it is equally true that when they fail in the world it is because their family or employers do not understand them and have little patience with them. One does not need to be a trained psychologist or a social worker to help these children in the community. It only requires a real touch of humanity and a little appreciation of their problem. They respond to kindness and cruelty; they smile and frown; they love and can hate; they are naturally honest and can be dishonest; they are naturally truthful; they are taught early in life to lie in self-defense; they are much like we were before we became sophisticated; if we teach them to do wrong they will go us one better for the lack of judgment that restrains the evil in us. To quote Dr. Wallace of Wrentham: "The morons who are making the trouble in the community are exactly the same classes who are making the trouble in the higher mental levels, i. e., pathological liars, thieves, prostitutes, rovers, psychopathic personalities, neurasthenics and those suffering from laziness, brainstorms, inferiority complex, temperamental episodes, emotional instability and the like." In all of the above they are not much different from their normal brothers.

If the physician is to help, the feeble-minded should be recognized early. The family physician should be able to do this and should not side-step the responsibility of saying so. The school should have his aid in determining their mental ability and their training should be largely manual, for their success depends little upon mental training.

It was pointed out that the Michigan Home and Training School has 175 out earning their living under supervision of the social worker. They are not only earning their living but have succeeded in accumulating a savings account of \$28,000. This same thing can be done in any community if those interested in the welfare of the sub-normal child or the way-ward child would give just a little time to it.

Dr. Blanche Weil of Flint, psychologist of the Whaley Memorial home spoke of the pre-school child and diagnosing mentality of infants. She demonstrated the Kuhlman on a one year old child. The interpretation and practical application of this test was revealed in a very interesting and instructive manner. Dr. Weil then spoke of certain aspects of her work with school children and illustrated the importance of careful supervision during this age.

Lunch was served at 12:30. Here the physicians had opportunity to observe how well the patients have been trained to serve at the table. All of the waitresses in this dining room were patients. The meeting was called to order again at 1:30 p. m. Dr. Zemmer, President of the Lapeer County Society presiding.

The first speaker after lunch was Dr. Cope, who spoke of the fact that the general practitioners should make considerable use of the state laboratories, but emphasized laboratory work that he must do for himself. He emphasized the importance of 24 hour total urine tests as opposed to the single sample. He discussed Benedict's test

for sugar as being superior to Fehling. Pregnancy increases carbohydrate intake and sometimes gives a positive reaction, so that if at any time there is a question of diabetes mellitus blood sugar examination should be made. Discussing blood examinations Dr. Cope did not place any confidence in the tallquist method of determining hemoglobin percentage. The Dare method is satisfactory if one can match colors accurately, but for the most people probably the ahli instrument is most satisfactory. As regards white blood count, the differential examination should always be made by counting on glass cover slips. This is more accurate than counting on glass slides because the white cells can be distributed more evenly over the surface. The white count and the differential count is of value in diagnosing acute infections. In chronic conditions there may be no change in white count but the differential count will reveal the presence of the chronic infection. Laboratory work on the blood is of value in pernicious anemia. Size, shape or condition of red cells is to be noted. There is also a low white count in pernicious anemia. It is not necessary to have nucleated reds to diagnose this condition. It is often of value to estimate the coagulation time of blood and in doing so the test tube method is best. Blood nitrogen will not diagnose a kidney lesion as the total nitrogen is raised only late in the disease. He urged physicians to use laboratories more frequently, always using them as an aid.

Dr. Hoobler of Detroit spoke on Endocrine Disturbances in Childhood, reviewing the effects of various endocrine organs in turn with regards to effect on growth and development. The larger part of his paper was a discussion of the vitamins as related to the growth and development of the child. Dr. Hoobler's paper was extremely interesting.

Dr. Christian, Pontiac State Hospital, states that while it is true that in the field of organic psychoses many contributions of scientific value has increased our knowledge, the larger field of functional psychoses is barren of many necessary facts which would lead us to a knowledge of the etiology of this state. This type of patient falls into the hands of the physician during the early development of his trouble and is demanding more and more service as time goes on. The family physician is the one who can furnish information as regards to the family and the early history of the warped personalities that find their way to the State Hospitals. Statistics can hardly be kept without the aid of the family physician. To be helpful the general practitioner must understand and accept the basic mental mechanisms of psychiatry all of which is easily within his reach.

Dr. J. Parsons of Ann Arbor spoke on Food Sensitization in relation to mental ability to carry on. He revealed the fact that many disease entities have recently been shown to be due to food sensitization and the cause of which is some common food. Apparently sensitization to food can at times simulate an astonishing number of organic diseases. The elimination of this food from the diet cures these symptoms. He gave a number of cases that failed to carry on in their college work and by elimination of food to which they were sensitive came back to their normal state and were able to do their work at school. Also behavior cases that were quickly restored to normal behavior by the elimination of food to which they were sensitive.

Judge Reed of the Juvenile Court of Detroit gave a very able discussion on relation of the court to the physician. He is of the opinion that in regards to the commitment of feeble-minded to an institution, the human element plays a considerable part. The court must rely upon the doctor to give the proper slant on what is to be done with these patients. Doctors are hesitant about saying that a child with an intelligence quotient of from 50 to 70 is feeble-minded but they are more injurious than the child with an intelligence quotient below 50. These children make up a large percentage of criminals. Early training of feeble-minded children obviates a criminal record. Twenty per cent of the children coming before the court for delinquencies are feeble-minded. Judge Reed cited the case of a boy, age 14, bad habits and criminal record, committed to Lapeer. Waited a long time, then took him in his own home with the idea of seeing what could be done with him. Under the influence of good home conditions and home training he was so improved as to be able to live at home without getting into trouble and later worked in Dodge Brothers earning \$9.50 per day. This kind of solution is so superior to commitment that it makes one feel that commitment is the last thing, after every other effort has been made. A physician's responsibility in this respect is considerable.

Dr. Davis Clarke spoke on schizophrenia and gave a real interesting and instructive discussion just after the manner that makes an impression upon the general practitioner.

Miss Mary Scovill, Assistant Psychologist of the Michigan Home and Training School, spoke on how much does the general appearance indicate mental levels. It was shown that it is practically impossible to guess a mental age from the appearance of an individual. Miss Scovill presented a chorus of 17 girls with special reference to three of the number. The chronological ages varied from 14 to 17 years. Mental ages varied from 7 to 14 years. These morons and borderlines gave three excellent vocal selections. It was related that when this chorus sang outside the institution one of the audience inquired if the chorus was from Detroit. One of the three girls particularly mentioned appeared quite bright but her mental age was that of a middle grade moron. Another of these three appeared to have a very low mentality but her actual mental age was one of the highest of the group. Miss Scovill illustrated her talk by lantern slides of children posed and if it had been outside of the institution, no one would have dreamed the subjects were feeble-minded.

Miss Rosebrook, chief of the psychologists staff of the Michigan Home and Training School, was next called, and gave a talk on "Aids in Detecting Mental Subnormality." The importance of estimating mental age was emphasized and the doctors were told where they could obtain forms for routine mental examination as a basis for estimating mental ages.

The day was brought to a close by a Clinic given by Dr. Blakeslee, Assistant Superintendent of the Michigan Home and Training School. He presented many types of feeble-minded with relation to physical development. This part of the program was extremely interesting for those who remained. They saw the children just as they were and recognized them as being typical of some they knew in their own community.

—Dr. Steele.



## COMMUNICATIONS

### The Editor

Michigan State Medical Journal—In transmitting the enclosed letter from Dr. Carl E. Badgley, Associate Professor of Surgery at the University of Michigan, it is impossible to refrain from a brief comment. Having watched the University hospital undergo a transformation from an unformed and newly initiated unit to an effective agent for human welfare, it has been a surprise and shock to find some members of the medical profession so selfish and jealous of its efforts in the alleviation of human suffering that they can and will send to the State Medical Journal communications of the type of Dr. Baumgarten's letter. Medicine is supposed to be one of the highest and noblest of the professions and in order to be so its practicing members must, it seems to me, impute the same high ideals and motives which they should possess to those of us who are trying our best to serve the citizens of the state in the ablest and most humanitarian way. If I felt that Dr. Baumgarten's opinion presented anything more than a distinct minority point of view, I should be indeed discouraged with the prospect. The splendid co-operation and broad understanding shown by the vast majority of the profession in the state, however, are guarantees of a constructive and favorable future, both for the profession and for the University hospital, in mutual co-operation.

C. C. Little.

Dr. Clarence Cook Little,  
President University of Michigan

My dear Dr. Little:

In a letter to the Open Forum of the August 1928 number of the Journal of the Michigan State Medical Society, Dr. E. C. Baumgarten has condemned the mode of operation of the Crippled Children's Act as a state medicine measure. Inasmuch as his conclusions are based entirely upon his personal knowledge of one case which was seen in a Crippled Children's Clinic held in Mount Clemens this summer under the auspices of the State Commission for Crippled Children, with the writer as the examiner, the responsibility of refuting his charges is mine.

The case to which he refers was a most interesting hip problem of a type of which I am making a special study. In this particular case, I deviated from our usual custom and told the attending nurse that I would be very glad of an opportunity to thoroughly study the case. The diagnosis from a clinical standpoint without the aid of a roentgen ray was either an early slipping of the upper femoral epiphysis or a Legg Calve disease of the hip. I do not recall that I attempted in any way to induce the parents or the child to consult me personally, but did urge immediate attention and substantiation of the diagnosis, because of the possibility of displacement of the head of the femur, if it were an early stage of this disease entity. Inasmuch as neither lesion of the hip would require at this stage an operation it is obvious that Dr. Baumgarten was misinformed in regard to the statement as to fees. Neither condition would require hospitaliza-

tion for a longer period than a few weeks at the most, so again he was misinformed. The nurse of whom he speaks flatly denies making any statements as to costs, or that an operation would be necessary.

Dr. Baumgarten seems to forget that the University hospital has no power to give free medical care and hospitalization to patients throughout the state. Such non-paying cases are sent to the hospital from their local community with state orders for their service after a thorough investigation of their financial status has been made by their own county officials. If on the other hand, a patient comes to the University hospital and is capable financially, he is charged a rate which is entirely commensurate with that charged by our colleagues throughout the state. So there is no truth in his statement concerning cutting fees.

Dr. Baumgarten has also found it convenient to forget that the University hospital does not sponsor the Crippled Children Clinics but merely are very happy to do their part in furnishing one of the examiners for the clinics. The personnel of the examining board of doctors for the Crippled Children's Clinics is composed of all the orthopedists in the state of Michigan who devote their full time to orthopedic surgery. The same trumpet blares for the private orthopedists as Dr. Baumgarten infers to be only heard for the University hospital. Seven of these examiners are in private practice in Detroit and are ethically recognized.

In conducting a Crippled Children's Clinic there is no attempt made by the examining surgeon to give any advice as to whom the patient should go. The child is examined and the results of the examination with the advice as to treatment are dictated to a stenographer. These notes are transcribed and then checked by the examining physician and are returned to the local committee. The examining doctor does not see them again unless the patient of his own free will and accord consults him further. The name of the attending physician is attached to the patient's examination record if they wish to have him receive a report of the examination. A copy of the examination is then forwarded to him by the local committee and the patient urged to report to him immediately for advice. The responsibility for notification rests with the local committee.

I wish to emphasize that the state does not favor the orthopedic service at the University hospital. Only one of the ten qualified examiners appointed by the commission is a member of the staff of the University hospital. Also a recent law has made hospitalization of the indigent cripple in other properly equipped hospitals than the University hospital an easy accomplishment if the patient so desires, with an emolument to the qualified orthopedists who handle the case.

The state does, however, feel that it can only recognize as surgeons qualified to treat the crippled child, those who have proven their ability.

Sincerely yours,  
Carl E. Badgley, M. D.

Editor of the Journal, M.S.M.S.—I have been reading with considerable interest both sides of the controversy going on between the Illinois State Journal and our own State Journal. I believe a survey of the rank and file of the medical profession in Michigan would show an overwhelming majority supporting the position of Dr. E. C.



Baumgarten. Why all the hullabaloo about the possibility or the probability of eventually having state medicine in Michigan? We already have it. If that statement needs confirmation I can furnish overwhelming evidence of its present existence. True it is, that it is not yet generally recognized as such, but that is only because of the blindness and stupidity of the medical profession itself when it comes to matters affecting their own interests. The people throughout the state, however, know a great deal about it and are taking advantage of its alleged benefits in increasing numbers every year.

A year ago last winter I was the instigator of a bill introduced into the legislature by Representative Culver. This bill was designed to correct some glaring evils in the present method of handling indigent cases and to protect the interests not only of physicians but also the citizens of the various communities throughout the state. It was a medical bill and legislatures are known to be generally hostile to any kind of medical legislation. Nevertheless this bill passed the lower house without a dissenting vote and went to the senate *where it was killed in committee* through the good offices of the lobbyist for the University hospital. I get this information from the former speaker of the House, Representative Wells, of Cassopolis. Mr. Wells further informs me that there is not a doubt in the world that this bill would have passed the senate had it been permitted to come to a vote. Newspaper articles over my signature, giving a few of the reasons for the introduction of the bill were sent by me personally to every prominent official of the State Medical Society as well as to a large number of members of the legislative bodies but not a single shred of support did this bill receive from any of these gentlemen.

What the rank and file of the medical profession of Michigan needs is a rude awakening to the ever growing menace of state medicine in Michigan. Is it going to permit the completion of this program and see it made permanent by legislative enactment or will they take it lying down? The citizenry of the state will help to make the necessary corrections if the physician will help themselves and if they are informed regarding the actual situation.

—E. M. Cunningham, M. D.

Cassopolis, Mich.

NOTE—This closes the discussion on this particular incident.  
—Editor.

### HEALTH OF SELF-SUPPORTING COLLEGE STUDENT

The health of the self-supporting college student was studied by R. W. Bradshaw, Oberlin, Ohio (*Journal A. M. A.*, June 2, 1928). Of the 420 self-supporting students, 306, or 73 per cent, made 1,202 visits to the student clinic for consultation and treatment. This represents a rate of 2,862 clinic visits per thousand of self-supporting students. Of the 1,253 independent students, 697, or 56 per cent, made 2,515 visits to the clinic, which represents a rate of 2,007 visits per thousand of non-self-supporting students. The self-supporting students from this point of view therefore suffered from 43 per cent more illness than the independent group. In the group of 420 self-supporting students there occurred 250 upper respiratory infections sufficiently severe to bring the student to the health service for treatment. In the group of 1,253 non-self-supporting stu-

dents, there were only 546 similar infections, the former giving a rate of 595 per thousand and the latter 436 per thousand. That is, the self-supporting group suffered from a 36 per cent higher incidence of such respiratory infections as colds during the year than the non-self-supporting group. Per thousand the self supporting group spent 1,269 days in the hospital, while the rate per thousand for the other group was only 947. The self-supporting group, then spent 34 per cent more time in the hospital than the independent group. The 233 self-supporting men spent 153 days in the hospital, a rate of 657 per thousand, while the self-supporting women (187) spent 380 days in the hospital, a rate of 2,032 per thousand, or more than two days per person and more than 300 per cent of the time spent by the self-supporting men. When the two groups of women are compared, one finds that 810 non-self-supporting women spent 970 days in the hospital, representing 1,197 days per thousand. This is only 59 per cent of the time spent in the hospital by an equal number of self-supporting women.

### HOW SUCCESSFUL IS THE UPLIFT

A great many sincere men and women are earnestly engaged in innumerable uplift movements. Platitudes about service, public health, education, housing conditions, the crime wave, morals and ethics resound from the platforms of luncheon clubs and even medical societies. We are cynical enough to believe that not much comes of all this activity, and the reason undoubtedly is that we commence our uplifting too late. The attitude of a human being toward life is formed very early and possible his entire personality is pretty thoroughly fashioned before the age of eight.

Medical evangelists work themselves into a holy furor over the hardened medical sinners who never come to a medical meeting, who scoff at hospital staff meetings, and who simply cannot be interested in the problems of organized medicine. Attractive post-graduate clinics are arranged for, but they do not attend. We start too late. Instead of wasting our energies on the obviously damned, let us devote more attention to the young doctor, just born professionally. The intern year is a formative period which medical societies have neglected. Encourage the young doctor to attend meetings, to take part in staff programs, to assume some responsibility in our organization. Very soon, all this will become a habit that will be life-long, and productive of both pleasure and profit.—Genesee County Medical Bulletin.

### MARTYRS TO MEDICAL SCIENCE

The announcement of the death of Dr. William Alexander Young at Accra, on the African Gold Coast, of yellow fever, marks the third scientist that this scourge of the tropics has claimed within eight months. The medical world is still dazed by the death of Dr. Hideyo Noguchi of the Rockefeller Institute of Medical Research, one of the world's greatest bacteriologists, who died in the same place ten days ago. The first of the martyr trio, Dr. Adrian Stokes, a brilliant young British pathologist, who won an enviable reputation during the World War, met his death while working on yellow fever at the laboratory of the Rockefeller Foundation at Lagos, Nigeria, last September.—Science Service.

## COUNTY SOCIETY ACTIVITY

Revealing Achievements and Recording Service

EDITOR: Frederick C. Warnshuis, M. D.

Secretary Michigan State Medical Society

### Official Program—108th Annual Meeting, Michigan State Medical Society, Detroit, Michigan

*September 26-27-28th, 1928*

#### OFFICIAL CALL

The Michigan State Medical Society will convene in Annual Session, in Detroit on September 26, 27, 28, 1928. The provisions of our Constitution and By-Laws and the official program will govern the business and transactions of this annual session.

Herbert E. Randall, President.

R. C. Stone, Chairman of the Council.

Henry R. Carstens, Speaker.

*Attest:* F. C. Warnshuis, Secretary.

#### DAILY SCHEDULE

Headquarters: Book-Cadillac Hotel.

##### September 25th

6:00 P. M.—Council Meeting.

##### September 26th

10:30 A. M.—House of Delegates.

2:00 P. M.—House of Delegates.

7:30 P. M.—House of Delegates.

##### September 27th

9:00 A. M.—Section Meetings.

1:30 P. M.—Section Meetings.

4:15 P. M.—Moving Picture Clinic.

7:45 P. M.—First General Session.

10:00 P. M.—President's Reception.

##### September 28th

9:00 A. M.—Section Meetings.

11:45 A. M.—Second General Session.

1:30 P. M.—Section Meetings.

#### HOSPITAL CLINICS

The several hospitals of Detroit will present a series of medical and surgical clinics on September 23rd and 24th. Details will be announced and will be posted at the hotels.

CLINICS AT HARPER HOSPITAL BY MEMBERS OF THE HARPER HOSPITAL STAFF DURING MEETING OF MICHIGAN STATE MEDICAL SCHOOL

1. Tuesday, September 25th, 2:30 P. M.  
Surgical Clinic in charge of Dr. Max Ballin.
2. Thursday, September 27th, 2:30 P. M.  
Ophthalmologic and Otolaryngologic Clinic in charge of Dr. George Frothingham.  
(This clinic is part of the program of the section of Ophthalmology and Otolaryngology.)
3. Friday, September 28th, 2:30 P. M.  
Obstetric and Gynecologic Clinic in charge of Dr. George Kamperman.  
(This clinic is part of the program of the section of Obstetrics and Gynecology.)
4. Saturday, September 29th, 2:30 P. M.  
Medical Clinic in charge of Dr. Hugo Freund.

After the clinics, members of the State Medical Society are invited to inspect the new hospital.

#### EXHIBITS

A splendid Scientific and Commercial Exhibit will be conducted on the Ball Room floor of the Book-Cadillac Hotel.

#### MEETING PLACES

All the Sessions, General Meetings, Registration and Exhibits will be located on the Ball Room Floor of the Book-Cadillac Hotel. The Registration Booth will be opened at 10:00 a. m., September 26th.

#### ENTERTAINMENT

No formal entertainment has been planned. Detroit offers independent features for those seeking diversion. Each day and evening is fully occupied by program features which the Scientific Committee feels are adjuncts to the following functions:

On Tuesday evening, the 25th, Dr. A. J. Cramp of the American Medical Associa-

tion, will deliver an address on Nostrums and Quackery before the Wayne County Medical Society at its auditorium in the Maccabees Building, corner Woodward and Putnam Avenues.

Following Dr. Cramp's address the society will tender open house to the delegates and members of the State Society in its club rooms on the 11th floor of the Maccabees Building.

In addition to this we would like the members of the State Society to feel free to avail themselves of the comforts and services in our club rooms and cafe.

On Thursday night following the Presidential Address there will be a reception dance in the Italian Gardens at the Book-Cadillac Hotel. All members and their wives and guests are cordially invited.

The Wayne County Medical Society is arranging for facilities for those members desiring to play golf at the Hawthorne Valley Golf Course. It is desirable that those wishing to play notify our secretary, 11th floor Maccabees Building that the proper number may be arranged for and complimentary cards issued.

Wayne County Medical Society.

E. C. Baumgarten, M. D.,  
Chairman, Committee  
on Arrangements.

### FIRST GENERAL SESSION

*Time:* Thursday Evening, September 27th, 7:45 P. M.

*Place:* Main Ball Room.

7:45 P. M.

1. Call to Order,  
President H. E. Randall, Flint.
2. Invocation.
3. Welcome, E. G. Martin, M. D.,  
President Wayne County Society.
4. Announcements, Secretary.
5. President Randall's Address—  
"The Contribution of Medicine to Modern Civilization."  
H. E. Randall, Flint.
6. Address, His Excellency, Fred R. Green,  
Governor of Michigan.
7. Nominations for President.
8. General Business.

### SECOND GENERAL SESSION

*Time:* Friday, September 28th, 11:45 A. M.

*Place:* Main Ball Room.

1. Call to Order.
2. Report of Nominating Committee.
3. Introduction of President Elect.
4. General Business.
5. Adjournment.

### MOVING PICTURE DEMONSTRATION

#### Clinical Demonstrations

Thursday Afternoon—4:00 P. M.

Main Ball Room

The following reels of moving pictures will be shown:

1. Infections of the Hand.—Knavel.
2. Goitre Operation—Crile.
3. Intestinal Peristalsis—Alvarez.
4. Hernia—Webster.
5. Labor—De Lee.

### SCIENTIFIC SECTIONS

#### PEDIATRICS

*Chairman, R. M. Kempton, Saginaw.*

*Secretary, Wm. S. O'Donnell, Detroit.*

#### THURSDAY MORNING SESSION

September 27th—9:00 A. M.

1. Thyrotoxicosis in Children—Dr. Hugo A Freund, Detroit.

A brief description of the histology of the normal thyroid at birth, in early childhood and during adolescence will be given. Illustrations of the earliest changes occurring in beginning colloid goiter in childhood will be shown. The histopathology of thyroids in children suffering from thyrotoxicosis will be demonstrated. Case histories and reviews of thyrotoxicosis together with metabolism studies and treatment will be presented.

2. The Treatment of Erysipelas with Erysipelas Streptococcus Antitoxin—Dr. John E. Gordon and Dr. D. C. Young, Detroit.

The severer cases of 256 erysipelas infections observed during 1927 were treated with the recently developed erysipelas streptococcus antitoxin. The serum exerts a favorable influence on the duration of the fever, toxemia and the period of incapacitation. The complications are not appreciably influenced.

3. The Etiology of Measles and Its Specific Treatment—Dr. N. S. Ferry, Detroit.

A review of the experiments carried out with the Streptococcus Morbilli isolated by Ferry and Fisher from the blood in early cases will be presented together with the experimental tests with measles toxin prepared from this organism and the recent clinical work with measles antitoxin obtained from horses immunized with measles toxin.

4. The Diagnosis and Treatment of Pyloric Stenosis—Dr. Grover C. Penberthy, Detroit.

This will include the analysis of a series of cases studied and operated upon at the Children's Hospital, a discussion of the differential diagnosis, medical management before and after operation, the operative procedure and the report of the final results in cases followed after leaving the hospital.



**THURSDAY AFTERNOON SESSION**

September 27th—1:30 P. M.

1. The Desirability of Seeing the Young Child as a Unit in Relation to Medical Diagnosis.

This paper is given through the cooperation of the Staff of the Merrill-Palmer School, Detroit: Dr. E. Lee Vincent, Dr. Rachel Stutsman, Dr. C. A. Wilson, Miss Winifred Rand, Miss Mary Sweeney, Miss Winifred Harley and Dr. Icie G. Macy. There will be a discussion and demonstration of the correlation of the mental, nutritional and educational findings regarding young normal children with the influence of the family relations and the significance and the interpretation of these in their relation to medical findings. This will also include the contributions of the biological chemistry laboratory to such case studies.

**FRIDAY MORNING SESSION**

September 28th—9:00 A. M.

1. The Role of Blood Transfusions in the Treatment of the Diseases of Children—Dr. Marsh W. Poole, Windsor, Ont.

Blood transfusion has become such a popular form of therapy in so many conditions encountered in infancy and childhood that its value is sometimes questioned. In this paper an attempt has been made to analyze the experience gained at the Children's Hospital, Detroit through a large series of transfusions.

2. The Study of the Active Immunization Against Scarlet Fever—Dr. Bernard B. Bernbaum, Detroit.

This study is a comparison of the active immunity against Scarlet Fever as shown by the Dick test produced by Larson's toxin and Dick's toxin. A group of children were Dick tested and the positive reactions were divided into two groups. One group was immunized with Larson's toxin and the second group was immunized with Dick's toxin. These two groups have been tested for immunity against scarlet fever for two years.

3. The Practical Methods of the Production of Active Immunity in Infectious Diseases—Dr. Roy W. Pryer, Lansing.

This paper considers primarily diphtheria toxin immunity as produced by diphtheria toxin-antitoxin mixture, diphtheria toxoid and purified diphtheria toxoid and ricinoleated diphtheria toxin, together with a brief review of the literature and a summary of the advantages and disadvantages of each method with the possibility of applying some of these methods to other tests as for instance in scarlet fever.

4. The X-Ray examination for Pulmonary Tuberculosis in Children—Dr. C. C. Birkelo, Detroit.

In the X-ray examination the tracheo-bronchial nodes are readily recognized and need not be guessed at when producing symptoms.

A tuberculous parenchymal infiltration has definite characteristics at all ages and the X-ray examination of the chest is just as valuable in the child as in the adult as regards the recognition of early tuberculosis.

**FRIDAY AFTERNOON SESSION**

September 28th—1:30 P. M.

- (a) Election of Chairman.

1. Encephalitis in Children—Dr. Thomas B. Cooley, Detroit.

This paper will discuss the increasing frequency of encephalitis in recent years, both the toxic and the infectious types. The difference of symptomatology in early life—epidemic and hemorrhagic encephalitis—encephalitic symptoms accompanying or following certain infections: pyelitis, measles, pertussis and influenza—lead encephalitis—the difficulties of differential diagnosis—the gravity of the sequelae, paralyses, mental retardation or imbecility, character changes and epileptiform states—the prognosis and treatment.

2. Mongolian Idiocy—Dr. Thomas D. Gordon, Grand Rapids.

The comparison of the theories of etiology—"Exhaustion Products"—endocrine theory—Crookshank's anthropological or reversion theory. The most characteristic physical signs and mental traits in recent cases seen in practice. The difficulties encountered in securing admission to suitable schools. The advantages of commitment to an institution. The factors influencing prognosis as to life and as to future mental development.

3. Allergic Diseases in Children—Dr. Samuel J. Levin, Detroit.

The most frequent conditions found are eczema, asthma urticaria and hay fever. The importance of the more obscure conditions such as vague abdominal pains epilepsy and headache in relation to allergy are stressed. By means of the skin tests the diagnosis of the etiological factors can often be shown and specific treatment frequently instituted. In those cases in which the etiological factor cannot be shown, non-specific foreign protein therapy has been of value.

4. "Sensitization"—Dr. John P. Parsons, Ann Arbor.

5. Serum Reactions: The Sensitizing Effect of Previous Antitoxin and Toxin-antitoxin Administration—Dr. John E. Gordon.

Persons who previously have received toxin antitoxin mixtures react more frequently to serum injections in the treatment of diphtheria, scarlet fever and erysipelas than do control persons. The sensitizing effect of previous serum injections is definite but less marked than toxin antitoxin. The severity of serum reactions is largely governed by the degree of sensitization.

# MEDICINE

*Chairman, Dr. A. F. Jennings, Detroit.*  
*Secretary, Dr. Wm. R. Vis, Grand Rapids.*

Thursday, September 27th—9:00 A. M.

## Symposium on Endocrinology

Chairman's Address—"Medical Experience in Hyperthyroidism."

Dr. A. F. Jennings, Detroit.

"Endocrines." Dr. C. J. Marinus, Detroit.

"Disturbance of Function Related to Emotional Conflicts."

Dr. Carl D. Camp, Professor of Neurology, University of Michigan.

"Obesity."

Dr. L. H. Newburgh, Professor of Medicine, University of Michigan.

"Hyperthyroidism: Recognition and Treatment."

Dr. Richard M. McKean and Dr. George E. McKean, Detroit.

September 27th—1:30 P. M.

"The Present Status of the Treatment of Asthma."

Dr. George L. Waldbott, Detroit.

"Healing Tuberculosis."

Dr. E. N. Nesbitt, Grand Rapids.

"Pulmonary Lobar Atelectasis."

Dr. V. M. Moore, Grand Rapids.

Subject to be announced—

Dr. Carl A. Hedblom, Professor of Surgery, University of Illinois.

"The Medical Treatment of Surgical Tuberculosis by Heliotherapy."

Dr. A. B. Olsen, Battle Creek Sanitarium.

"Electro-Cardiograms and Their Clinical Significance."

Dr. John L. Chester, Detroit.

"Partial Heart-Block in Upper Respiratory Infections."

Dr. Leslie P. Colvin, Henry Ford Hospital.

Friday, September 28th—9 A. M.

"The Why of Buttermilk Feeding: Demonstration."

Dr. Don H. Duffie, Central Lake.

"The Relation of Diet to Xanthoma."

Dr. C. C. Curtis, Department of Medicine, University of Michigan.

"On the Use of U-50 and U-100 Insulin in Diabetes."

Dr. C. L. Hess, Bay City.

"The Early and the Later Diagnosis of Diabetes—Which?"

Dr. Henry J. John, Cleveland Clinic.

"The Fundus Oculi in Cardio-Vascular Lesions."

Dr. George F. Suker, Professor of Ophthalmology, University of Illinois.

September 28th—1:30 P. M.

## Election of Chairman and Secretary.

"The Management of Edema in Various Types of Circulatory Disturbances."

Dr. L. E. Verity, Battle Creek Sanitarium.

"Multiple Neuritis Due to Chronic Focal Infection."

Dr. Cecil Corley, Jackson.

"The Present Status of Gall-Bladder Diagnosis and Surgery."

Dr. F. C. Currier and Dr. Wm. R. Torgerson, Grand Rapids.

"Secondary Anemias."

Dr. C. C. Sturgis, Professor of Medicine, University of Michigan.

# SURGERY

*Chairman, Fred. A. Collier, Ann Arbor.*  
*Secretary, F. J. O'Donnell, Alpena.*

September 27th—9:00 A. M.

## SYMPOSIUM ON THORACIC SURGERY

"Phrenectomy and Intra Pleural Pneumolysis."

Dr. Edward O'Brien, Detroit.

"Surgical Treatment of Pulmonary Cavitation."

Dr. F. S. Dolley, Los Angeles.

"Chronic Pulmonary Suppuration."

Dr. Wyman Whittemore, Boston.

"Surgical Treatment of Pulmonary Tuberculosis."

Dr. Carl A. Hedblom, Chicago.

Discussed by:

Dr. John Alexander, Ann Arbor.

Dr. A. W. Hudson, Detroit.

September 27th—1:30 P. M.

"Interrelation of Thyroid, Adrenals and Nervous System."

Dr. George Crile, Cleveland.

Discussed by:

Dr. C. D. Brooks, Detroit.

"Treatment of Vascular Lesions of the Extremities."

Dr. Arthur W. Allen, Boston.

"Treatment of Burns in Children."

Dr. E. C. Davidson, Detroit.

"Diagnosis of Brain Tumors."

Dr. A. S. Crawford, Detroit.

Discussed by:

Dr. Wm. J. Cassidy, Detroit.

Dr. Max M. Peet, Ann Arbor.

September 28th—9:00 A. M.

## SYMPOSIUM ON TREATMENT OF FRACTURES

"Fractures of the Ankle."

Dr. Arche Hall, Detroit.

"Treatment of Common Dislocations."

Dr. John Hodgen, Grand Rapids.

"Fractures About the Elbow."

Dr. Grover C. Pemberthy, Detroit.

"Modern Treatment of Fractures."

Dr. Philip D. Wilson, Boston.

Discussed by:

Dr. J. G. R. Manwaring, Flint.

Dr. F. C. Kidder, Detroit.

Dr. Otto Lee Ricker, Cadillac.

Dr. A. H. Whittaker, Detroit.

September 28th—1:30 P. M.

## Election of Chairman and Secretary.

"Comforts in Cancer."

Prof. F. N. G. Starr, Toronto.

"Bladder Paralysis, Its Etiology, Prognosis and Treatment."

Dr. R. E. Cumming, Detroit.

"Treatment of Pyelitis."

Dr. Carl Eberbach, Milwaukee.

"The Place of Pyelography in Diagnosis."

Dr. Edward Cathcart, Cleveland.

Discussed by:

Dr. Hugh Cabot, Ann Arbor.

Dr. H. W. Plaggemeyer, Detroit.

Dr. W. C. Cole, Detroit.

## OPHTHALMOLOGY AND OTO-LARYNGOLOGY

*Chairman, J. S. Wendel, Detroit.*

*Secretary, A. R. McKinney, Saginaw.*

Thursday, September 27th—9:00 A. M.

9:00 A. M.—Chairman's Address,

J. S. Wendel, Detroit.

"Treatment of Traumatic and Acquired Facial Deformities."

Claire L. Straith, M. D., D. D. S.  
Detroit, Michigan.

Frequency of Industrial injuries; motor accidents; fractures of facial bones; face lacerations, etc. Immediate treatment; subsequent treatment; illustrating scar removal, bone and cartilage grafts, etc. Deformities acquired by disease, congenital deformities, etc. Treatment—Lantern slide illustrations.

Discussion opened by:

Ferris N. Smith, M. D.,  
Grand Rapids, Michigan.

"Management of Non-Inflammatory Glaucoma,"

Walter R. Parker, M. D.,  
Detroit, Michigan.

Classification of Glaucoma as a means of determining method of treatment; classified according to character of anterior or posterior chamber.

Discussion opened by:

Geo. F. Suker, M. D., Chicago, Ill.

"The Frontal Bone and the Variations in Its Para Nasal Sinuses; also the Sphenoid Bone in Relation to the Variations in Its Sinuses."

Henry J. Prentiss, Professor of Anatomy, University of Iowa,  
Iowa City, Iowa.

Discussion opened by:

C. F. McClintic, M. D.,  
Detroit, Michigan.

12:00 M. —Luncheon with round table discussion led by R. Bishop Canfield, M. D., Ann Arbor, Michigan.

2:30 P. M.—Demonstrations and operation of interesting cases at Harper Hospital by the members of the Ophthalmological and Oto-Laryngological staff.

Friday, September 28th—9:00 A. M.

9:00 A. M.—Election of Officers.

Subject to be announced.

C. F. McClintic, Detroit, Michigan.

"Some Unusual Retinal Changes in Nephritis and Hypertension."

Arthur J. Bedell, M.D., Albany, N.Y.

"Eye Findings in Certain Intracranial Complications."

Geo. F. Suker, M. D., Chicago, Ill.

12:00 M. —Luncheon with round table discussion led by Dr. Arthur J. Bedell.

2:30 P. M.—Demonstrations and presentation of interesting cases at Detroit Receiving Hospital. In charge of Dr. J. Milton Robb and members of staff.

## GYNECOLOGY AND OBSTETRICS

*Chairman, G. Van Amber Brown, Detroit.*

*Secretary, Harold Henderson, Detroit.*

Thursday—September 27th

9:00 A. M.—"The Unrecognized Occiput Posterior Position."

Dr. H. E. Northrup, Highland Park.

9:30 A. M.—"The Management of Certain Obstetric Difficulties."

Dr. W. P. Tew, London, Canada,  
University of Western Ontario.

10:00 A. M.—"Forceps vs. Version in the Management of Dystocia."

Dr. Harry Pearse, Detroit.

10:30 A. M.—"New Ideas Regarding Treatment of Abortion."

Dr. Basil L. Connelly, Detroit.

### Afternoon

1:15 P. M.—Early Diagnosis of Uterine Cancer."

Dr. Frank C. Witter, Detroit.

2:00 P. M.—"Shall We Operate on Acute Pus Tubes."

Dr. Max Burnell, Flint.

2:30 P. M.—"Saving the Uterine Adnexa in Pyosalpinx Cases."

Dr. R. T. Morris, New York.

3:00 P. M.—"Fallopian Tube Sterility."

Dr. Alexander M. Campbell,  
Grand Rapids.

Dr. J. Duane Miller Grand Rapids.

3:30 P. M.—"Comparative Results of Complete and Sub-total Hysterectomy."

Harry M. Nelson, Detroit.

Friday, September 28th

*Election of Chairman and Secretary.*

9:00 A. M.—"The Use of Lipiodol in Gynecological Diagnosis."

Dr. H. C. Cushman, Detroit.

Dr. E. R. Witwer, Detroit.

9:30 A. M.—"Cancer Problems."

Rr. Reuben Peterson, Ann Arbor.

10:00 A. M.—"Malpositions of the Pelvic Organs."

Dr. Emil D. Rothman, Detroit.

10:30 A. M.—"Treatment of Placenta Praevia."

Dr. James M. Pierce, Ann Arbor.



Afternoon

2:00 P. M.—Obstetrical and Gynecological Clinic  
in the amphitheatre of Harper Hos-  
pital.

Dr. George Kamperman.  
Dr. Ward Seeley.  
Dr. A. E. Catherwood.

HOUSE OF DELEGATES

Crystal Ball Room

Wednesday, September 26th

FIRST SESSION

10:30 A. M.

*Speaker, Henry R. Carstens, Detroit.*  
*Vice-Speaker, H. J. Pyle, Grand Rapids.*  
*Secretary, F. C. Warnshuis, Grand Rapids.*

Committee on Credentials:

C. M. Williams, Alpena.  
J. C. Kenning, Wayne.  
John T. Kaye, Menominee.

ORDER OF BUSINESS

1. Call to Order.
2. Report of Credentials Committee.
3. Speaker's Address—H. R. Carstens.
4. President's Address—H. E. Randall.
5. Annual Report of the Council—R. C. Stone.
6. Appointment of Reference Committees.
7. Election of Nominating Committee.

NOTE: No two members shall be from the  
same Councilor Districts.

Duty of Nominating Committee:

- (a) Supervise Ballot for President.
- (b) Nominate:
  1. Four Vice Presidents.
  2. Delegates to A. M. A. and their Al-  
ternates to succeed:  
C. S. Gorsline.  
J. D. Brook.  
L. J. Hirschman.
  3. Designate place of next Annual  
Meeting.

8. Reports of Committees:  
Medical Education.  
Hospital Survey.  
Public Health.  
Legislation.  
Tuberculosis.  
Venereal Prophylaxis.  
Civic and Industrial Relations.  
Nursing Education.  
Medical History.  
Legislative Commission.  
Delegates to the A. M. A.

9. New Business and Resolutions.
10. Recess.

SECOND SESSION

2:30 P. M.

1. Roll Call.
2. Reports of Reference Committee.
3. Unfinished Business.
4. New Business.
5. Recess.

THIRD SESSION

7:30 P. M.

1. Roll Call.
2. Reports of Reference Committee.
3. Report of Nominating Committee.
4. Elections:
  - (a) Four Vice Presidents.
  - (b) Place of Annual Meeting.
  - (c) Councilors to succeed G. L. LeFevre and  
Richard Burke.
  - (d) Speaker.
  - (e) Vice-Speaker.
  - (f) Delegates and Alternates to A. M. A.
5. Unfinished Business.
6. Adjournment.

DELEGATES TO ANNUAL MEETING

NOTE:—*Delegates in Capitals, Alternates in  
lower case type. Number opposite County  
Society indicates paid membership.*

Alpena—16

C. M. WILLIAMS  
H. J. Burkholder

Northern Michigan Medical Society—Antrim,  
Charlevoix, Emmet, Cheboygan—11

W. E. CHAPMAN  
Don H. Duffie

Barry—10

B. C. SWIFT  
A. W. Woodburne

Bay-Arenac-Iosco—59

D. T. SMITH  
V. H. Dumond

Berrien—41

W. C. ELLET  
R. H. Snowden

Branch—13

W. A. GRIFFITH  
R. L. Wade

Calhoun—108

C. S. GORSLINE  
GEORGE HAFFORD  
W. L. Godfrey  
W. F. Martin

Cass—7

Chippewa-Mackinac—15

G. A. CONRAD  
F. H. Husband

Clinton—18

VERNON C. ABBOTT  
W. B. McWilliams

Delta—21

A. L. LAING  
J. K. Parish

Dickinson-Iron—14

C. W. WALKER  
W. H. Alexander

Eaton—21

P. H. QUICK  
S. A. Stealy

**Genesee—119**

C. F. MOLL  
F. REEDER  
W. H. WINCHESTER  
M. S. Knapp  
J. G. R. Manwaring  
W. H. Marshall

**Gogebic—21**

W. ELLWOOD TEW  
C. E. Stevens

**Grand Traverse-Leelanau—23****Gratiot-Isabella-Clare—31**

C. F. DU BOIS  
M. J. Budge

**Hillsdale—22**

C. T. BOWER  
G. R. Hanke

**Houghton-Baraga-Keweenaw—38**

W. T. KING  
Geo. L. MacWaldie

**Huron—7****Ingham—79**

J. EARL McINTYRE  
MILTON SHAW  
O. H. Bruegel  
Fred Huntley

**Ionian-Montcalm—37**

C. H. PEABODY  
J. F. Pinkham

**Jackson—62**

CORWIN S. CLARKE  
C. D. MUNRO  
D. F. Kudner  
W. L. Finton

**Kalamazoo-Van Buren-Allegan—117**

R. D. THOMPSON  
D. J. SCHOLTEN  
F. T. Andrews  
L. E. Westcott

**Kent—196**

A. V. WENGER  
G. H. SOUTHWICK  
J. D. BROOK  
H. J. PYLE  
E. W. Schnoor  
W. E. Wilson  
J. S. Brotherhood  
R. H. Spencer

**Lapeer—20**

H. B. ZEMMER  
W. J. Kay

**Lenawee—34**

H. H. HAMMEL  
R. G. B. Marsh

**Luce—10**

R. E. L. GIBSON  
F. P. Bohn

**Macomb—31**

A. J. WARREN  
W. H. Norton

**Manistee—10**

A. A. McKAY  
H. D. Robinson

**Marquette-Alger—37**

Nels Robinson

**Mason—11****Mecosta—14**

WM. T. DODGE  
Glenn Grieve

**Menominee—11**

JOHN T. KAYE  
Edward Sawbridge

**Midland—7**

JOSEPH H. SHERK  
George S. Orth

**Monroe—30**

S. J. RUBLEY  
M. A. Hunter

**Muskegon—60**

V. S. LAURIN  
F. Garber, Sr.

**Newaygo—10**

P. DRUMMOND  
B. F. Black

**Oakland—101**

N. B. COLVIN  
H. A. SIBLEY  
Leon Cobb  
Robert Baker

**Oceana—8**

W. L. GRIFFIN  
J. D. Buskirk

**O. M. C. O. R. O.—(Otsego-Montmorency-Crawford-Oscoda-Roscommon-Ogemaw—7**

C. R. KEYPORT  
Frank E. Abbott

**Ontonagon—5**

C. F. WHITESHIELD  
E. J. Evans

**Ottawa—29**

R. H. NICHOLS  
S. L. DeWitt

**Saginaw—66**

J. T. SAMPLE  
J. W. Hutchinson

**Sanilac—7**

D. MAC NAUGHTON  
R. B. Mitchell

**Schoolcraft—6**

W. E. THOMPSON  
G. A. Shaw

**Shiawassee—29**

C. A. CRANE  
None elected

**St. Clair—49**

R. C. FRASER  
W. P. Derck

**St. Joseph—15**

CHARLES MORRIS  
Dale Weir

**Tri-County—(Wexford-Kalkaska-Missaukee)—18**

W. JOE SMITH  
S. C. Moore

**Tuscola—24**

U. G. SPOHN  
R. L. Dixon

**Washtenaw—123**

THERON S. LANGFORD  
JAMES D. BRUCE  
Frederick A. Collier  
J. A. Wessinger

**Wayne—1,294**

E. C. BAUMGARTEN  
ANDREW P. BIDDLE  
JOHN L. CHESTER  
JAMES H. DEMPSTER  
HARRY F. DIBBLE  
H. B. GARNER  
L. J. HIRSCHMAN  
FRANK A. KELLY  
R. E. LOUCKS  
J. A. McGARVAH  
ROGER V. WALKER  
GEORGE J. BAKER  
GEORGE VAN AMBER BROWN  
A. E. CATHERWOOD  
J. C. KENNING  
C. F. McCLINTIC  
F. M. MEADER  
FRANK J. SLADEN  
C. D. BROOKS  
WM. J. CASSIDY  
WM. P. WOODWORTH  
WM. S. REVENO  
S. W. INSLEY  
C. C. BIRKELO  
W. N. BRALEY  
E. D. SPALDING  
R. C. ANDRIES

Wm. Donald  
L. T. Henderson  
Wm. J. Stapleton  
Geo. E. McKean  
Harry L. Clark  
Douglas Donald  
Bruce C. Lockwood  
Walter J. Wilson  
J. Edwin Watson  
Bernard Bernbaum  
Henry A. Luce  
Geo. E. Frothingham  
E. B. Richey  
E. D. Rothman  
Louis J. Garipey  
J. D. Curtis  
Wm. R. McClure  
L. J. Morand  
B. H. Priborsky  
A. O. Brown  
Charles A. Wilson  
D. S. Brachman  
F. D. Royce  
H. M. Malejan  
F. C. Buesser  
F. H. Cole  
Jay M. Burgess

**WOMAN'S AUXILIARY**

The State Woman's Auxiliary will hold its Annual Meeting at 2:00 P. M., Thursday afternoon.

Mrs. Guy L. Kiefer, President.  
Mrs. J. E. McIntyre, Secretary.

**ENTERTAINMENT FOR LADIES**

This function will be assumed by the members of the Wayne County Woman's Auxiliary.

**EXHIBITS**

*Scientific*—Two rooms have been set aside for scientific exhibits. They will be under the supervision of Doctors Davis and Evans.

*Commercial Exhibits*—The following firms will occupy space in the area allotted to Commercial Exhibits:

Cameron Electrical Company.  
Medical Protective Company.  
Swan-Meyers Company.  
Kalak Company.  
Laboratory Products.  
Hanovia Company.  
Maltine Company.  
W. B. Saunders Company.  
Horlicks Malted Milk.  
Ingram Company.  
Petrolagar.  
Sharp and Smith.  
Victor X-Ray Corporation.  
J. F. Hartz Company.  
C. V. Mosly Company.  
Professional Underwriters' Corporation.  
Kellogg Food Company.  
Lactropon Company.

# **MATERNAL MORTALITY STUDY IN MICHIGAN—PRELIMINARY REPORT**

GUY L. KIEFER, (Health Commissioner)  
LANSING, MICHIGAN

Early in 1927 the Michigan Department of Health considered the advisability of making a study of all deaths in Michigan from causes connected with childbirth. Realizing that this study should not be undertaken without the co-operation of the Michigan State Medical Society, the Commissioner of Health conferred with the secretary and later with the Council of the Michigan State Medical Society. As a result of these conferences, a study of maternal deaths was begun by the Michigan Department of Health in co-operation with the State Medical Society in April, 1927, to cover a period of at least two years. The purpose of this study is threefold, as follows:

1. To furnish to the State Medical So-



ciety facts concerning maternal deaths, particularly as they refer to medical practice.

2. To make available additional information about maternal deaths in Michigan.

3. To make possible more intelligent efforts to lower maternal mortality in Michigan.

Following is a progress report of a study of 619 maternal deaths in Michigan beginning with deaths in July, 1926, and including all deaths studied up to July, 1928. The report is not inclusive, as not all deaths occurring during the two year period have been studied. Maternal deaths in Detroit are studied by a physician from the Detroit Department of Health, and all maternal deaths outside of Detroit are studied by a full time physician from the Michigan Department of Health. This co-operation from the Detroit Department of Health has made it possible for cases to be studied soon after the deaths occur, which is most desirable.

A visit is made by the two physicians engaged in the study, to each physician whose name appears on a maternal death certificate. Facts are obtained from the physician as to prenatal care given the patient, complications of pregnancy, intercurrent diseases, history of delivery, including technique of the attending physician, home or hospital care, history of previous pregnancies, accessibility of patient to physician or hospital, and a complete history of the circumstances related to the death. Study of deaths in hospitals includes visits to the hospitals where the deaths occurred, inspection of records of the cases, and additional data as to the type of obstetrical care offered by the hospital in question. In this way a complete picture is obtained of all the facts related to the death, directly or indirectly.

#### DEATHS BY AGE GROUPS

The first grouping of deaths is made according to age, and the table given below shows the loss of 439 mothers under 30 years of age among the 819 cases studied.

Under 20 years .....	78
20-24 years .....	166
25-29 years .....	195
30-34 years .....	159
35-39 years .....	156
40 and over .....	65
Total .....	819

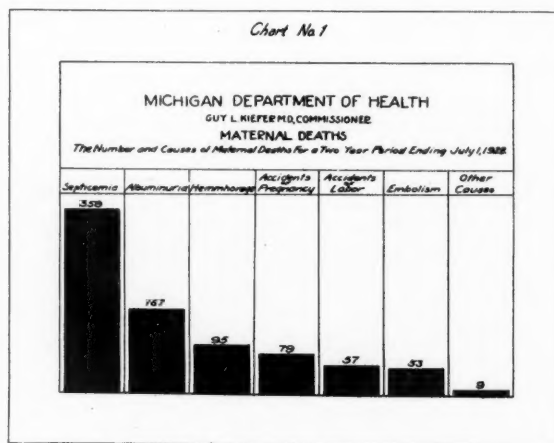
#### DEATHS BY CAUSE GROUPS

The deaths are grouped next by causes, with septicemia leading by a great ma-

pority and albuminuria and convulsions, the second largest group (Chart 1). These figures point to a need of intensive effort to reduce the number of deaths from these two causes, which are largely preventable.

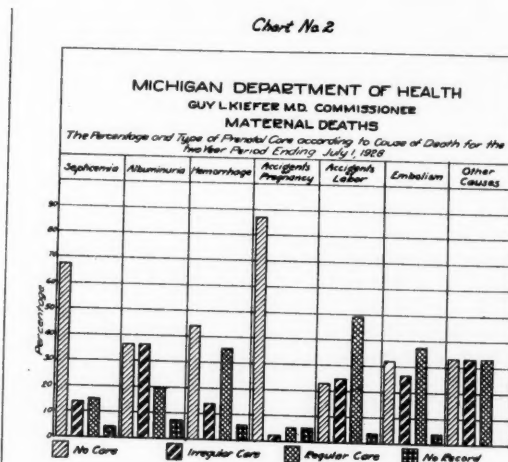
Puerperal Septicemia .....	359
Puerperal Albuminuria and Convulsions.....	167
Puerperal Hemorrhage .....	95
Accidents of Pregnancy .....	79
Accidents of Labor .....	57
Embolus, Sudden Death .....	53
Causes following childbirth (n. o. s.)*.....	9
Total .....	819

\* Not otherwise stated.



#### PRENATAL CARE

An attempt has been made to check up on the amount and type of prenatal care received by these women (Chart 2). Where



no care was given during pregnancy, it has been so stated. Where the prenatal care was irregular or begun after the sixth month, it has been called irregular. Where it has been regular, throughout pregnancy, or begun not later than the sixth month and regular from then on, it has been called regular. A few cases had no record as to prenatal care. The chart on pre-

natal care illustrates clearly just the amount of prenatal care given in each cause group. The number of deaths of septicemia *receiving no prenatal care is particularly high*, due to deaths from abortion in this group (approximately 50 per cent); that is, deaths from septicemia following abortion. Of the entire group of 819 deaths, 447 *had no prenatal care*, 156 had irregular care, 175 had regular care, and 41 had no record whatever. The amount of prenatal care for the groups will be discussed in the special studies of some of the groups. Only 34 women out of the 819 deaths had a Wassermann test during pregnancy.

PRENATAL CARE FOR ENTIRE GROUP

None .....	447
Irregular .....	156
Regular .....	175
No record .....	41
Total .....	819

ABORTIONS

There were 231 abortions in the entire group of deaths, the majority of them (181) being followed by septicemia, which was given as the cause of death on the death certificate.

HOSPITALIZATION

A study was made as to the home or hospital care, and the results showed that 271 had home care, 432 received home care at first and were later removed to hospital, while in 115 cases the condition causing the death developed in the hospital and received hospital care only. In one case there was no record of home or hospital care. The hospitalization of cases is also included in the special studies discussed later.

Home care .....	271
Home and hospital care .....	432
Hospital care .....	115
No record .....	1
Total .....	819

BIRTHS

There were 318 live births (of 819 pregnancies), 163 stillbirths, and 338 pregnancies had no issue.

Live births .....	318
Stillbirths .....	163
No issue .....	338
Total .....	819

DELIVERY

Normal deliveries occurred in 242 cases; operative deliveries occurred in 266 cases and of these 66 were Cesarean deliveries; there was no delivery in 304 cases, and no

record of delivery was obtained in 7 cases. Five cases were delivered by midwives and one by a neighbor.

Normal deliveries .....	242
Operative deliveries .....	266
No delivery .....	304
No record .....	7
Total .....	819

COMPLICATIONS

The greatest number of complications of pregnancy occurred in the group of deaths from albuminuria and convulsions. In the entire group of 819 puerperal deaths 122 cases had albuminuria, 84 convulsions, 73 high blood pressure, 106 edema, 33 prolonged headache, 39 pernicious vomiting of pregnancy, 71 bleeding during pregnancy; 112 of these cases had treatment during pregnancy for these complications. In 55 cases, complications were not recorded.

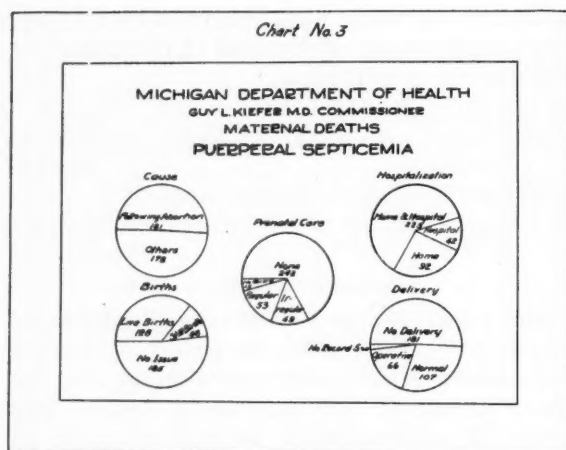
NUMBER OF PREGNANCY

There were 237 first pregnancies (of which a special study is given later), and one woman died in her 21st pregnancy. The following table shows the number of pregnancy for each case, as obtained from the maternal history.

Number of Pregnancy	
1 .....	237
2 .....	108
3 .....	79
4 .....	78
5 .....	41
6 .....	37
7 .....	24
8 .....	19
9 .....	11
10 .....	13
11 .....	4
12 .....	5
13 .....	4
15 .....	3
17 .....	1
18 .....	1
21 .....	1
No record .....	153
Total .....	819

PUERPERAL SEPTICEMIA

A special study is submitted of deaths from puerperal septicemia, since this causes the greatest number of maternal deaths (Chart 3). The 359 deaths from septicemia fall into two groups: those following abortion, of which there were 181, and all other deaths from septicemia, of which there were 178. Of the 181 abortions, 111 were self-induced, 26 were induced by some one other than the mother herself (but not proven), 27 were spontaneous, 4 therapeutic, and in 13 the record was incomplete. The therapeutic



abortions were indicated because of toxemia, endocarditis, pernicious vomiting, and acute pyelonephritis. Thirty-nine of the abortion cases had hemorrhage, 55 had curettage, (not all instrumental, finger curettage in some cases), and 52 had temperature before curettage.

Of the 178 cases of septicemia not following abortion, 124 had vaginal examinations, and of these 80 had preparation for vaginal examination, 17 had no preparation, and 27 had no record of preparation (probably had none).

#### AGE GROUPS (Septicemia)

The age groups of deaths from septicemia are given below. A total of 215 of the 359 deaths from septicemia occurred in women under 30 years of age.

Under 20 years .....	33
20-24 years .....	87
25-29 years .....	95
30-34 years .....	69
35-39 years .....	53
40 and over .....	22
<b>Total .....</b>	<b>359</b>

#### PRENATAL CARE (Septicemia)

As would be expected, many of these cases of septicemia had no prenatal care whatever, both because of the large number of abortions, and because many of the deaths not following abortions occurred under poor home conditions (Chart 3). The following table shows the amount of prenatal care received by these women. Only 16 of the 359 had Wassermanns taken as part of prenatal care.

Prenatal Care (Septicemia)	
None .....	242
Irregular .....	49
Regular .....	53
No record .....	15
<b>Total .....</b>	<b>359</b>

#### HOSPITALIZATION (Septicemia)

The care received at the time of the development of septicemia is shown below (Chart 3). Ninety-two had home care only, 225 developed septicemia at home and received home care for a time, but were later removed to hospital, and 42 cases of septicemia developed in hospitals. There were 128 live births, 46 stillbirths, and 185 had no issue.

CARE	
Home care .....	92
Home and hospital care .....	225
Hospital care .....	42
<b>Total .....</b>	<b>359</b>

BIRTHS	
Live births .....	128
Stillbirths .....	46
No issue .....	185
<b>Total .....</b>	<b>359</b>

#### DELIVERY (Septicemia)

Of the 359 deaths from septicemia, 181 had no delivery, 107 were normal deliveries, and 66 were operative (13 Cesarean). Five cases had no record of delivery.

Normal .....	107
Operative .....	66
No delivery .....	181
No record .....	5
<b>Total .....</b>	<b>359</b>

#### NUMBER OF PREGNANCY (Septicemia)

There were 84 first pregnancies among the 359 deaths from septicemia. The table below shows the number of pregnancy of all cases of septicemia.

1 .....	84
2 .....	42
3 .....	34
4 .....	32
5 .....	19
6 .....	12
7 .....	10
8 .....	8
9 .....	6
10 .....	4
11 .....	1
12 .....	2
13 .....	1
15 .....	1
17 .....	1
No record .....	102
<b>Total .....</b>	<b>359</b>

#### CONTRIBUTORY CAUSES (Septicemia)

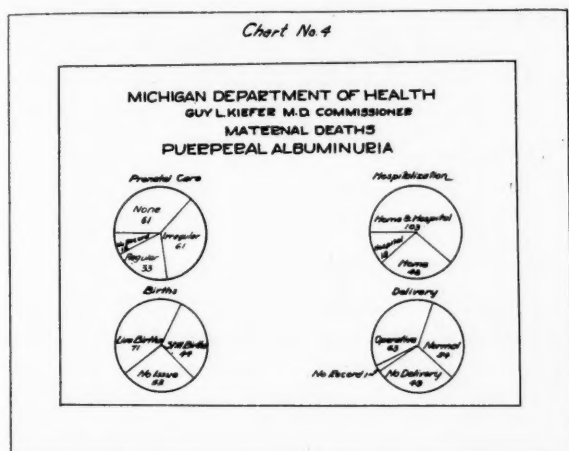
The following contributory causes are of interest in considering deaths from septicemia: Operative deliveries preceded 66 deaths, abortions preceded 181 deaths; long labor, scarlet fever, hemorrhage, erysipelas, ruptured ectopic gestation, salpingitis, appendicitis, retained foetus,



intra-uterine manipulation and laceration at delivery, were also named as contributory causes.

#### PUERPERAL ALBUMINURIA AND CONVULSIONS

This cause was responsible for the second highest number of deaths (Chart 4).



It is significant to note that of these 167 deaths only 33 had regular prenatal care. One hundred and twenty-two had no care or only irregular care, while 12 had no record of prenatal care. In many of these cases, the doctor was first called when the patient was in convulsions, and the lack of prenatal care in many instances was due to indifference or ignorance on the part of the mother; in some instances, it was due to inaccessibility to doctor or hospital.

#### PRENATAL CARE (Puerperal Albuminuria and Convulsions)

None .....	61
Irregular .....	61
Regular .....	33
No record .....	12
<b>Total .....</b>	<b>167</b>

#### HOSPITALIZATION (Albuminuria and Convulsions)

The care of these women after the development of the condition causing death may be grouped as follows (Chart 4):

Home care .....	46
Home and hospital care .....	103
Hospital care .....	18
<b>Total .....</b>	<b>167</b>

#### BIRTHS (Albuminuria and Convulsions)

Of the 167 deaths from puerperal albuminuria and convulsions 71 were preceded by live births, 44 by stillbirths, and in 52 there was no issue (Chart 4).

Live births .....	71
Stillbirths .....	4
No issue .....	52
<b>Total .....</b>	<b>167</b>

#### DELIVERY (Albuminuria and Convulsions)

In this same group 54 had normal deliveries, 63 (24 Cesarean) had operative deliveries, and in 49 there were no deliveries; and there was no record of delivery in one case.

Normal deliveries .....	54
Operative deliveries .....	63
No delivery .....	49
No record .....	1

**Total .....** 167

#### COMPLICATIONS OF PREGNANCY (Albuminuria and Convulsions)

Complications were most frequent in this group. Ninety-two had albuminuria during pregnancy, 80 had convulsions, 57 had high blood pressure, 67 had edema, 29 had prolonged headache, 22 had pernicious vomiting, and 3 had bleeding. Seven cases had no record of complications. Only 61 of the 167 had any medical treatment of complications during pregnancy.

#### PUERPERAL HEMORRHAGE

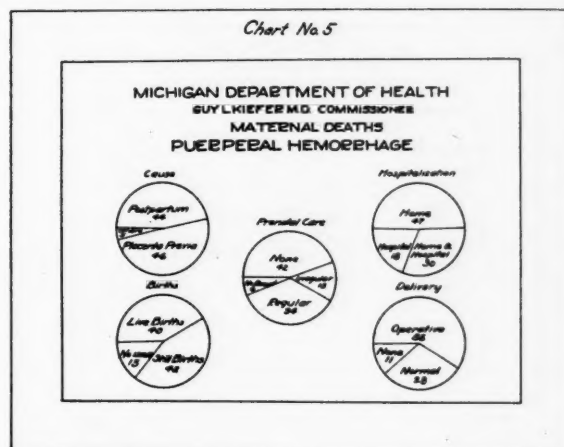
This condition caused the third highest number of deaths. Of the 95 deaths from puerperal hemorrhage, 46 were due to placenta previa, 44 were post partum hemorrhage, and 5 were due to other causes under puerperal hemorrhage.

Placenta Previa .....	46
Postpartum previa .....	46
Other causes under puerperal hemorrhage .....	5

**Total .....** 95

#### PRENATAL CARE (Puerperal Hemorrhage)

Of this group of puerperal hemorrhage deaths, 42 had no prenatal care, 13 had irregular care, and 34 had regular care (Chart 5). Six cases had no record of prenatal care.



None .....	42
Irregular .....	13
Regular .....	34
No record .....	6

**Total .....** 95

## HOSPITALIZATION (Puerperal Hemorrhage)

Forty-seven of these 95 puerperal hemorrhage deaths had home care only, 30 had home care followed by hospital care, and 18 had hospital care only, as the condition developed in the hospital (Chart 5).

Home care .....	47
Home and hospital care .....	30
Hospital care .....	18
Total .....	95

## BIRTHS (Puerperal Hemorrhage)

Forty of these deaths were preceded by live births, 42 by stillbirths and 13 had no issue (Chart 5).

Live births .....	40
Stillbirths .....	42
No issue .....	13
Total .....	95

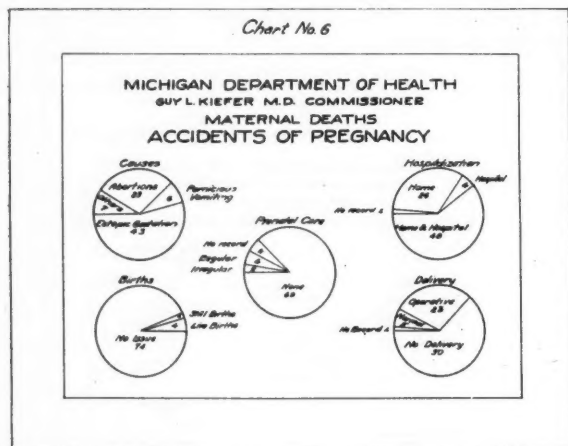
## DELIVERY (Puerperal Hemorrhage)

Twenty-eight of the above cases had normal deliveries, 56 had operative deliveries and 11 had no delivery (Chart 5).

Normal .....	28
Operative .....	56
No delivery .....	11
Total .....	95

## ACCIDENTS OF PREGNANCY

There were 79 deaths from this cause and of these 23 were due to abortions, 6 to pernicious vomiting of pregnancy, 43 to ectopic gestation, and 7 to other causes under Accidents of Pregnancy (Chart 6).



## PRENATAL CARE (Accidents of Pregnancy)

Almost this entire group had no prenatal care since 69 of the 79 were without any medical supervision during pregnancy, 2 had irregular care, 4 had regular care, and in 4 there was no record of prenatal care (Chart 6).

None .....	69
Irregular .....	2
Regular .....	4
No record .....	4
Total .....	79

## HOSPITALIZATION (Accidents of Pregnancy)

Home care only was given to 26 of the above group, 48 had home care followed by hospital care, 4 hospital care, and 1 had no record of care (Chart 6).

Home care .....	26
Home and hospital care .....	48
Hospital care .....	4
No record .....	1
Total .....	79

## BIRTHS (Accidents of Pregnancy)

There were 4 live births, 1 stillbirth and 74 without issue of the 79 deaths from this cause (Chart 6).

Live births .....	4
Stillbirths .....	1
No issue .....	74
Total .....	79

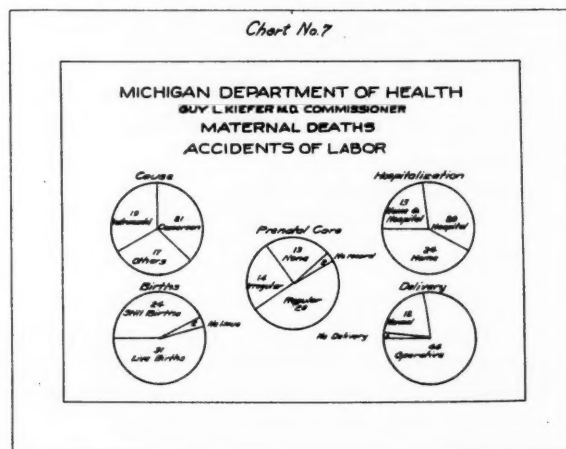
## DELIVERY (Accidents of Pregnancy)

Five cases had normal delivery, 23 operative, in 50 there was no delivery, and in 1 no record of delivery. Most of the operative deliveries in this were due to ruptured ectopic gestation (Chart 6).

Normal .....	5
Operative .....	23
No delivery .....	50
No record .....	1
Total .....	79

## ACCIDENTS OF LABOR

There were 57 deaths from accidents of labor, and of these 21 were Cesarean deliveries, 19 instrumental and other operative procedures, and 17 due to other causes



under accidents of labor, such as ruptured uterus, shock and so forth (Chart 7). It is interesting to note that 28 of these 57

cases had regular prenatal care, with deaths resulting in spite of such care. This is to be expected since prenatal care could not prevent the operative deliveries which were followed by so many deaths.

#### HOSPITALIZATION (Accidents of Labor)

Home care and hospital care were about evenly divided in this group as there were 24 cases which had home care, 20 which had hospital care, and only 13 which had home care followed by hospital care (Chart 7).

Home care .....	24
Home and hospital care .....	13
Hospital care .....	20
<b>Total .....</b>	<b>57</b>

#### BIRTHS (Accidents of Labor)

In this group of 57 accidents of labor, there were 31 live births, 24 stillbirths, and 2 cases with no issue (Chart 7).

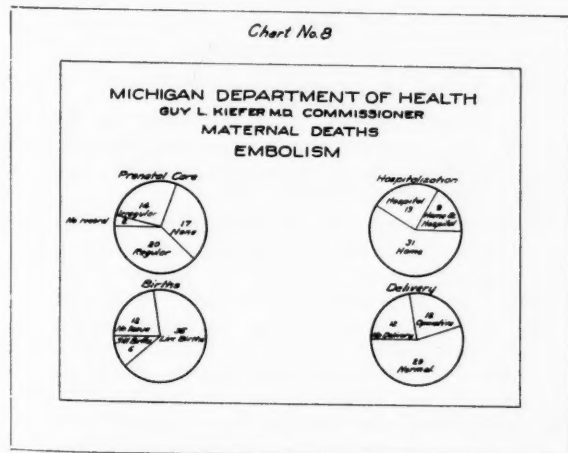
Live births .....	31
Stillbirths .....	24
No issue .....	2
<b>Total .....</b>	<b>57</b>

#### DELIVERY (Accidents of Labor)

Deliveries among these accidents of labor were as follows:

Normal .....	12
Operative .....	44
No delivery .....	1
<b>Total .....</b>	<b>57</b>

The large number of operative deliveries and the fact that 24 of the 57 were first pregnancies seem definitely related.



#### EMBOLUS, SUDDEN DEATH

There were 53 deaths from embolus and sudden death (Chart 8). Prenatal care probably has little effect on these cases so that the fact that of these, 17 had no prenatal care, 14 irregular, 20 regular, and 2 no record, probably has no great significance.

None .....	17
Irregular .....	14
Regular .....	20
No record .....	2
<b>Total .....</b>	<b>53</b>

#### HOSPITALIZATION (Embolus, Sudden Death)

Thirty-one of these 53 deaths were cared for at home, 9 had hospital care following some home care, and 13 had hospital care.

Home care .....	31
Home and hospital care .....	9
Hospital care .....	13
<b>Total .....</b>	<b>53</b>

#### BIRTHS (Embolus, Sudden Death)

Of the cases dying from embolus and sudden death 35 had live births, 6 stillbirths, and 12 had no issue.

Live births .....	35
Stillbirths .....	6
No issue .....	12
<b>Total .....</b>	<b>53</b>

#### DELIVERY (Embolus, Sudden Death)

Delivery in 29 cases was normal, in 12 operative, and in 12 there was no delivery.

Normal .....	29
Operative .....	12
No delivery .....	12
<b>Total .....</b>	<b>53</b>

#### CAUSES FOLLOWING CHILDBIRTH (N. O. S.)

There were 9 deaths from causes following childbirth. Of these, 3 had no prenatal care, 3 irregular care, and 3 regular care.

None .....	3
Irregular .....	3
Regular .....	3
<b>Total .....</b>	<b>9</b>

#### HOSPITALIZATION (Causes Following Childbirth)

Of the 9 deaths from causes following childbirth, 5 had home care, and 4 had home care followed by hospital care.

Home care .....	5
Home and hospital care .....	4
<b>Total .....</b>	<b>9</b>

#### BIRTHS (Causes Following Childbirth)

All of the 9 deaths from causes following childbirth were preceded by live births.

Live births .....	9
Stillbirths .....	0
No issue .....	0
<b>Total .....</b>	<b>9</b>

#### DELIVERY (Causes Following Childbirth)

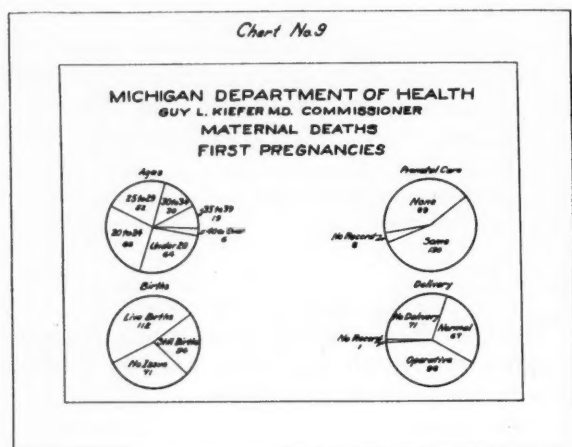
Delivery in 7 cases was normal, and in 2 operative.

Normal .....	7
Operative .....	2
<b>Total .....</b>	<b>9</b>



## FIRST PREGNANCIES

A group of 237 deaths from first pregnancies furnished some interesting mate-



rial (Chart 9). The following table shows the age groups of these first pregnancies:

	Acc. of Pregnancy	Puerperal Hemorrhage	Other Acc. of Labor	Puerperal Septicemia	Puerperal phlegmasia alba dolens	Puerperal Alb. and Convulsions	Causes following Childbirth	Total
Under 20 yrs.	2	3	6	23	5	25	0	65
20-24 yrs.	9	5	3	25	4	20	0	66
25-29 yrs.	6	4	6	20	4	10	2	52
30-34 yrs.	0	2	6	10	4	8	0	30
35-39 yrs.	5	3	2	4	3	2	0	19
40 and over	0	0	1	2	2	1	0	6
Total	22	17	24	84	22	66	2	237

The greatest number of first pregnancies died from septicemia, as there were 84 deaths from this cause. Next in number are puerperal albuminuria and convulsions with 66 deaths. Accidents of pregnancy caused 22 deaths, accidents of labor 24 deaths, embolus 22 deaths, puerperal hemorrhage 17 deaths, and causes connected with childbirth not otherwise stated, 2 deaths.

Puerperal septicemia	84
Puerperal albuminuria and convulsions	66
Accidents of pregnancy	22
Accidents of labor	24
Embolus, sudden death	22
Puerperal hemorrhage	17
Causes connected with childbirth not otherwise stated	2
Total	237

## PRENATAL CARE (First Pregnancies)

Ninety-nine of the 237 first pregnancies had no prenatal care whatever, 130 had some prenatal care, including regular and irregular, and 8 had no record as to prenatal care. A total of 95 had measurements taken as part of prenatal care.

None	99
Regular or irregular	130
No record	8
Total	237

## DELIVERY, BIRTHS AND CARE (First Pregnancies)

Of the deliveries, 67 were normal, 98 operative, 71 had no delivery, (30 were abortions) and 1 had no record of delivery. Sixty-six had home care, and 171 had hospital care. One hundred and twelve were live births, 54 were stillbirths, and 71 had no issue.

Normal deliveries	67
Operative deliveries	98
No deliveries	71
No record	1

Total	237
Live births	112
Still births	54
No issue	71

Total	237
Home care	66
Hospital care	171

Total	237
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From a public health viewpoint the outstanding facts brought out by this Study of Maternal Mortality in Michigan are the large number of deaths under 30 years of age, the inadequacy of prenatal care received by these mothers, the prominence of puerperal septicemia and albuminuria and convulsions (both largely preventable) as causes of deaths, and the large number of deaths from septicemia following abortion.

## MEDICAL HISTORY

To the House of Delegates:

The complexion of the Committee on Medical History has changed during the year through the resignation of Dr. J. D. Brook and the appointment of Dr. W. H. Winchester.

Gratifying progress has been made in the work and a large amount of material assembled. With the hoped-for co-operation of collaborators the history can be placed in the hands of the printer early in 1929. Interesting correspondence concerning publication has taken place which, whatever the outcome, has been highly gratifying to the committee. Negotiations are not at this writing sufficiently far advanced to permit detail.

The name of Dr. James C. Willson of Flint is revered in this Society. His son, Mr. George C. Willson, has presented two handsome cuts to illustrate the history.

Presents of kodaks of Michigan scenes, his own photographing—have been made by Dr. Lucius H. Zeuch, compiler of the History of Medical Practice in Illinois.

Professor L. A. Chase, of Marquette, member of the Michigan Historical Commission, has been most helpful in suggestion, in contributing bio-

graphical material, and furnishing subjects for quaint illustrations.

Mr. H. M. Nimmo, publisher of the Detroit Saturday Night, has loaned a cut of "Cadillaqua."

Miss Evelyn Labinsky, editor of "The Quill" of Flint, has loaned a cut of "The Pioneer."

Dr. Geo. N. Fuller, secretary Michigan Historical Commission, has loaned two cuts.

Other than the above many illustrations have been provided, among them one of an Indian Mask, loaned by Mr. W. V. Smith of Flint.

Disbursements to date, \$358.49.

For the Committee,

Respectfully submitted,

C. B. Burr, Chairman.

#### REPORT OF THE COMMITTEE ON VENEREAL DISEASE PREVENTION

Because of the vast amount of suffering, physical inefficiency and mental degeneration to our citizens of this generation; the serious handicap placed upon the coming generation by the large number of degenerates resulting from syphilis as well as the loss of the unborn due to sterility from gonorrhea; and the large expense involved in the care of the mental and physical sequela of these infections, to say nothing of the great loss to industry and the welfare of our commonwealth—your committee senses the importance of its mission.

However, there exists in the minds of some that this committee is superfluous inasmuch as the Michigan Department of Health is maintaining a large staff for the control of venereal disease. This department has a corp of competent lecturers who are well equipped and active in the educational program. The state laboratories are rendering most valuable service to the doctors in diagnostic aids. Through the local health officer, treatment facilities are made possible to all those who cannot afford regular physician's services. A system has been developed to keep under control and treatment all infected cases until they are no longer capable of transmitting the disease.

It seems apparent that the State Department of Health is ably equipped to cope with this venereal disease problem, yet it is a fact that their efforts would be powerless without the aid and co-operation of the doctors individually and the organized medical profession.

Consequently, we consider it the big duty of this committee to call the attention of the members of the Society to the importance of sympathetic and conscientious co-operation with the entire program of the State Board of Health.

It is apparent that if every case of venereal disease now existing could be quarantined until cured or until past the contagious period that these diseases could be conquered and absolutely obliterated. They would terminate with those who are now infected and the next generation would be relieved of all such hazards.

We therefore urge every member of our society the fulfillment of his legal obligation to his state, his sacred duty to his fellowmen, and his moral duty to his own family to faithfully and conscientiously co-operate with the full program of the State Health Department in its warfare against venereal disease—the greatest scourge now existing to mankind.

Respectfully submitted,

W. M. MARTIN, M. D.

Chairman Venereal Disease Committee.

#### PUBLIC HEALTH COMMITTEE

The Public Health Committee of the Michigan State Medical Society wish to bring their report to you in the form of comments and suggestions relating to the general health conditions of Michigan for the past year.

We heartily endorse the research, educational, and public service work accomplished by the State Health Department under the able supervision of Dr. Guy L. Kiefer, and of other organizations which have worked and co-operated with the State Department of Health toward the same accomplishments. We especially commend the splendid work accomplished during the year on the prevention of spread of rabies, the free distribution of scarlet fever anti-toxin, and the research and elimination work of tuberculosis and contagious abortion in cattle by the Department of Agriculture and Department of Health. We also heartily endorse the campaign carried on in Detroit and other parts of Michigan on the elimination of quacks and other illegal practices of medical attention, the splendid co-operation of the press in health publicity throughout the state, and the general co-operation of all institutional forces and the general public in health work.

Inasmuch as in Hygeia, the profession has at its command, a wonderful means of educating the younger generation in matters of personal and public health, we recommend that each county society be urged, even at its own expense, if necessary, to place a copy of Hygeia in every school in their county every month of the school year.

We suggest a further and continued study and aid in the above factors; also we suggest and recommend: 1—That the county and local health units work in a closer relationship with the State Department of Health. 2—That further inspection be made of public swimming pools, public buildings, eating houses, and all other places where diseases may be spread. 3—That study and care of commercial and municipal waste in connection with sewage disposal, health work, and stream pollution be made. 4—That the carrying on of health and sanitary campaigns in public schools and communities be encouraged. 5—That the teaching of health work through all health associations and the public press be maintained.

Respectfully submitted,

R. C. MAHANEY,

Chairman Public Health Committee.

#### REPORT OF COMMITTEE ON TUBERCULOSIS

Your Committee on Tuberculosis have endeavored to co-operate with the various organizations working along this line; especially have we tried to assist the State Tuberculosis Society in their campaign to encourage physical examinations. Various talks pertaining to tuberculosis and health movements have been given before both lay and professional audiences.

It has been the endeavor of the committee to encourage the public to go to their physicians for examinations, rather than go to the public clinics unless they were so recommended by their physician or unable to pay a physician.

Also it has been hoped that the physician would take enough interest in this work to especially qualify himself for such examinations realizing that the battle against tuberculosis must be fought by the general practitioner rather than by

the specialist and clinics, at the same time not in any way depreciating the value of the latter.

B. A. SHEPARD, Chairman.

#### COMMITTEE ON MEDICAL EDUCATION

To the House of Delegates:

As there has been no material change in Undergraduate Medical Instruction during the year, the Committee on Medical Education will make no report this year to the House of Delegates; but reports progress.

Yours very truly,  
ANDREW P. BIDDLE, Chairman.

#### REPORT OF COMMITTEE ON NURSING EDUCATION

To the House of Delegates,  
Michigan State Medical Society:

1. Your Committee on Nursing Education begs leave to present the following report:

2. For some years there has been a feeling that nursing services are not entirely satisfactory. There seems to be an enlarging gap between physicians and nurses and patients. For the proper understanding of this situation it seems advisable to give a brief resume of the development of the nurse and, to show that a real problem exists, to quote freely from hospital superintendents, prominent physicians and prominent leaders of the nursing profession, all of whom speak with authority.

#### HISTORY

3. Since time began the solicitous care of a mother has been the basis of home nursing. Her instinctive desire to serve led her to give aid and comfort to those who suffer and until comparatively recently this was the only nursing. These services were at first limited to the family for the most part, but for centuries they have been given to neighbors, and those with more skill naturally gave more and became known as nurses.

4. Not a great while ago, as communities grew, there developed those who hired out to give such care to the ailing and then the "practical" nurse appeared. She apparently was sufficient for the needs of the day.

5. After the rise of scientific medicine and surgery, the care of the sick became complicated and exacting and it brought entirely new types of physicians, surgeons, hospitals and nurses. No longer could there be confidence in untrained and unscientific attendants.

6. In the hospitals the first nursing was done largely by convalescents and untaught hired women of a type made famous by "Sairy Gamp." These hired helpers gradually improved and received a better standing through the work and leadership of Florence Nightingale and others. A generation after her time there was a rapid development of modern hospitals in this country, because of a prosperity never reached elsewhere, and with it a new type of nurse was evolved, one who was highly trained for her work and without whom the advanced type of hospital we possess could hardly have functioned. These hospital trained nurses left the hospitals, because of their superior ability, to work outside and rapidly replaced the practical type to a large degree. The demands of modern medicine needed her in the home just as well as in the institution.

7. Institutions varied in the length of service required in this training and most of it was a rotation apprenticeship. At first instruction in class rooms was poorly organized and given largely as an accommodation by those with other more important duties. Improvements were made until a two year course was quite general throughout the country. At this time, in the late 90's, training schools were so numerous and so many students were needed to man the hospitals that they were graduated faster than they were needed in the home. Competition outside became too keen and because of this overcrowded field, hospitals were threatened with a future shortage of pupils and rather than hire graduates in large numbers, they lengthened the course to three years to help the hospital economically and not to fill the need for a three year nurse.

8. It will be noticed that up to this time nurses were developed to fill a need and their ability was just about what was required for each era in the art of caring for the sick. Hospitals gave such instruction only as was needed for this purpose and the hospitals decided what was to be given as determined by its experience. It will be noticed and should be emphasized that the function of the nurse was at all times to be an intermediate in making available to the patient such treatment as the physician's knowledge made desirable. She was in truth his agent.

#### CONTROL OF TRAINING TAKEN OVER BY NURSES

9. A change soon came and nurses were trained with less regard to an existing need than to an innate desire to be elevated from the status of a servant to that of a learned profession. This was a natural outcome, for as nurses became numerous they became articulate through the natural development of leaders and no longer could their demands be ignored in the handling of the problems of the sick. They demanded and obtained licensing boards composed in all or in part of nurses and then began the process of restricting their competition and advancing their standing by the boosting of requirements. They fixed on the degree of R. N. as the goal of their efforts, which no unlicensed nurse could tack on her name. Efforts have been made to limit nursing, by hired nurses, to these R.N.'s but so far unsuccessfully.

10. Then through their licensing boards they put pressure upon hospitals demanding changes and additions as they desired under threat of not licensing graduates if they did not conform. By persuasion and dictation they made all executives R.N.'s, put in some full time teachers, made standard our advanced elaborate curriculum, laid down the hours of work at the bedside, in study and in the class room, controlled living conditions, regulated entrance requirements and transfers to other schools and many other things, but not including in any of the demands listed by our own State Board any mention of the standard of care to be given patients.

11. Much of this is very sensible and not too much to ask, but gradually some doubts have arisen until one hospital superintendent has said:

12. "I think that hospital superintendents are commencing to get a little tired, a little weary of turning out every year hundreds and hundreds of young women with a diploma of their various schools and realizing in their own hearts that those young women are imitation physicians, are half-baked chemists, are almost cooks, and when the last is said and done, they are not anything very definite or final or very finished. I think we are tired of doing that. I know that



in my hospital where we have to go out and struggle to find ward supervisors, to find general duty nurses, there is this feeling, for we have to get them from all over the country. They think nothing at all of taking valuable material, gauze or linen or anything else and using it for dust cloths. They do not seem to realize that there is any question of finance in a hospital, that there is any question of personality or psychology which should come into hospitals. All those things are left out of the curriculum.

13. "I think we are a little tired of something else. A certain group of people will meet together, they will have a talk and they will think. They will change the curriculum, they will change the requirements for admission to the school. They will say they must have teachers with such and such qualifications and such and such education and the superintendent has to pay the bills. He cannot go on running a training school unless he complies with those regulations over which he has had no control and in regard to which his opinion has not been asked and he must go before his board of directors and justify the expense regardless of what it may be. I think we are tired and I think there are two things that the superintendents of hospitals, maintaining and conducting training schools want: The first is a little bit of peace from this question, so that we may take care of some of our other manifold duties, and, we are tired of taxation without representation." (1)

14. The object of a licensing system is to protect the public from an inferior or fraudulent service. When the public puts the power of granting licenses directly into the hands of those who are the recipients of this protective procedure, it opens the way to unwanted development in two ways: First it leads to an insidious but tremendous inducement to limit competition by making the requirements harder to meet and second, in a natural desire to amplify the esteem with which they are held, the recipients can side-step menial things and require an indulgence in scientific and cultural fields where the atmosphere is more to their desire. Human frailty should not be asked to withstand the seductive lure of such temptations.

#### THE FUTURE OF TRAINING

15. What may we expect in the future? This we can well judge by what the leaders are advocating and which they are making the desires of organized nursing. Some of these leaders may be quoted.

16. First they want to get training schools as far away as they can from control by physicians and, even in some ways, hospitals. The Michigan State League of Nursing Education asks:

"An endowed school with a separate faculty in the University of the same standing as the other faculties in the other schools in the University, chosen in the same way, with the same privileges and under the same rules in the University. A head of the school, a dean, the same as in the other schools of the University." (2)

17. One of the most prominent educators of nurses in this country says:

"The fact is that the modern doctor knows little more about the details of the nurse's work than the father of a family knows about the management of a household and the care of children. He knows what good nursing is and its results, but he is not skilled in the particular art. He prescribes it as he does massage, or diet, or drugs or dentistry, but that does not mean he himself is skilled in the art of massage, or dietetics, or pharmacy or dentistry. Why should he seek to control the education of the nurse any more than he does the education of the dietitian or social worker or dentist or occupational therapist who also co-operates with him in the treatment of the sick? The physician should be consulted about the nurse's training in so far as it touches on the treatment of disease, and should assist in the teaching of these branches that are distinctly medical in nature. We are always glad to have his point of view about the training of nurses, if it is based on a real understanding of our work. But the job of training nurses must be in the hands of nurses, just as the job of training teachers belongs to teachers. This idea is not new. It is the foundation stone on which Florence Nightingale based her whole system and wherever this rule has been departed from there has been failure." (3)

18. They want to abandon the apprenticeship

method of learning, which has been stated as follows:

"The utilization of pupils of schools for nurses in the routine ward care of patients is of doubtful propriety and value. The modern curriculum of nurse training will not permit the pupil a sufficient number of hours to give this service.

19. "Schools for nurses are becoming more didactic. The tendency of the curricula is away from the bedside—toward university training for the pupils of these schools. There is an inclination to evolve modified medical schools for nurse training. The pupil nurse will receive intensified academic instruction in medicine in centralized schools, preferably of university affiliation. Her clinical hospital bedside training would be secured by assignment, somewhat as the interne now receives his clinical training. It would be a training school for nurses with bedside clinical affiliation. It is plain that these plans do not contemplate or promise adequate bedside nursing to afford routine bedside ward care for our institutions." (4)

20. Nurses dub the present system of training an apprenticeship system and want to kill it, as:

"The school should be looked upon as an educational institution, as is any other vocational school, the hospital functioning in giving experience to nurses as to medical students. The school for nurses should not be considered on the part of the hospital as a means of cheap labor. If, because of financial difficulties, the school provides the only means by which the hospital can keep open its doors, then the hospital's obligation to the nurse includes awakening the public to its responsibility toward the institution and school (which exists in response to the public's need) and enlisting its support in providing means to establish properly equipped schools of nursing, thus making it possible for the nurse to be educated along modern lines rather than upon the modified apprenticeship system which still exists in many schools (a relic of ancient times) and which falls far short of a means of educating the nurse of today." (5)

21. A prominent English hospital superintendent comments as follows on the famous Rockefeller Report from which he first quotes:

"Gradually it has become apparent that the old system is a slow and cumbrous method of education; that it often has not even the virtues of a true apprenticeship wherein pupils work directly under the eye of a master. For in the hospital ward the immediate superior of the new student is the head nurse, responsible for the management of the ward unit, large or small, according to circumstances. Her duties are principally executive; as a teacher she is rarely equipped. With the best teaching equipment, she must in any case, after satisfying the imperative claims of ward management, have but the scantiest margin of time or attention available for the students. Often, indeed, she is herself a student learning administration, the practical running of a ward with its countless details as to supplies, assignment of nurses, household management, etc.

22. "The probationers' time is plainly misused in excessive ward work when they spend weeks in making surgical dressings for the hospital which they could learn to make in a week, or waste months in the diet kitchen preparing salads for private patients, cooking in quantity for the wards, or cleaning vegetables. Such time is worse than wasted, for the unreasonableness and monotony of such assignments naturally tend to chill the beginner's enthusiasm and responsiveness to the first flush of interest in her new career." (Quotation from Committee on Nursing—Rockefeller Report.)

23. One may say at once that cleaning vegetables and cooking for the wards is not done by the nurses in English hospitals, but by the kitchen or domestic staff, but there are many routine duties which must be carried out daily by nurses both while in training and in private practice; and routine is not only a valuable factor in education, but a most valuable assistance to intellectual development. One must be always thinking. In this connection it may be permissible to quote from Professor A. N. Whitehead, one of the most distinguished mathematicians and philosophers in England, who is shortly going to the University of Harvard as a Professor of Philosophy:

"It is a profoundly erroneous truism, repeated by all copy books and by eminent people when they are making speeches, that we should cultivate the habit of thinking what we are doing. The precise opposite is the case. Civilization advances by extending the number of important operations which we can perform without thinking of them. Operations of thought are like cavalry charges in a battle—they are strictly limited in number—they require fresh horses, and must be made only at decisive moments."

25. "This is an admirable apology for routine as an edu-

cational factor. Operations and services performed day after day throughout a period of three years become bone of one's bone, automatic but thoroughly accurate, reliable and unforgettable. To keep nurses learning new things every day without considerable intervals of routine will lead either to superficiality or to mental breakdown." (6)

26. They want to be "co-workers" and "consultants" with physicians and not servants or agents. They want to abandon their function as an intermediate between patient and physician and develop a field of their own. They state that nurses exist not for the doctor but for the patient; this is true, but not all the truth, as the doctor exists for the patient also. But the nurse's function is to act as a "go-between" and carry to the patient all those things whether great or small which medical knowledge would give him. They will admit that the field of medicine and nursing overlap "somewhat."

27. "How many have heard statements something like this? 'The nurse is the physician's assistant. She exists to carry out his orders. Therefore physicians should know what is the best kind of training for nurses and should control and direct that training.'"

28. "Let us see where the trouble lies in this familiar fallacy. In the first place I think it will be agreed that nurses exist, not for the service of the doctor but for the service of the patient and the public generally. The physician exists for the same purpose. Both are trying to make sick people well, to relieve suffering and to prevent disease. But they have different functions to perform. The doctor diagnoses and prescribes and gives some treatments himself. The nurse cares for the patient's needs, conserves his strength, nourishes him, observes his symptoms and carries out many of the treatments prescribed. Each occupies a different circle, and the circles overlap somewhat. Would it destroy the best kind of co-operation between doctor and nurse if we decided to call the nurse a 'partner' or a 'colleague' of the physician and treat her as such?" (8)

29. They want a higher standing, a broader education, a fuller life and then to do those menial things which the sick somehow seem to require, they want helpers in their schools. This order of beings may be allowed to practice as "trained attendants." Outside of the hospital these trained attendants must confine themselves to caring for those with minor ailments only, while the big and glorious cases are to be handled by the R.N.'s.

30. The well known Rockefeller report on Education of Nurses states:

"Steps should be taken through state legislation for the definition of licensure of a subsidiary grade of nursing service, the subsidiary type of worker to serve under practicing physicians in the care of mild and chronic illness and convalescence, and possibly to assist under the direction of the trained nurse in certain phases of hospital and visiting nursing."

31. This has been commented on as follows:

"The remedy suggested is that the hospitals to which training schools are attached should be staffed almost entirely by trained women and that the probationer nurses should enter the wards on much the same footing as medical students; to be taught, but not to do the work. And the trained nurses are to be relieved of most of their routine work by the introduction of a lower grade of nurse, or nursing worker, a child of Gibeon, who shall hew the wood and draw the water while the trained nurse does the really useful things." (6)

32. In fact the purely personal service which is a large part of the work needed to make a patient comfortable has become a bore to the nurse and she would have none of it as witness this from a training school leaflet:

33. "WHAT THE FUTURE HOLDS FOR THE REGISTERED NURSE."

34. "Nursing is one of the most useful and satisfying professions which any woman can enter."

35. "The most inspiring part of the work is the privilege of assisting in the wonderful results which are being accomplished by physicians and surgeons, and other leaders in the field of research and practical medicine. The nurse's work is an essential part of all these activities; and so she has a vital interest in every detail connected with them."

36. "As superintendent of a hospital, or a school of nursing, as head nurse in hospital wards or operating

rooms, as supervisor of dispensaries and clinics, there are always opportunities for rapid advancement."

37. "As a nurse instructor in schools of nursing and as an instructor in Red Cross courses in home care of the sick, the demand far exceeds the supply."

38. "As visiting, school, child-welfare, medical, social service and industrial nurse, there are unlimited opportunities." (8)

39. In all this there is no mention of caring for patients but hospitals are to give the requisite training for all this other stuff.

40. "For at least five years there has been increasing uneasiness among the medical profession and the public over the changing attitude of the nurse toward her vocation and her labor. There are now nurses engaged in public health work, social service, laboratory technic, mental investigation, dietetics, roentgenology, anesthesia, hospital management, teaching and many other positions. Too few nurses who enter the training school have their thoughts focused on the ideal of personal service to ailing humanity. Apparently nurses are being trained in technical matters, to a point at which dignity suffers when they are asked to undergo the tribulations of personal service. The modification of curriculums should tend to the development of more nurses who will consider the care of the sick their highest ideal." (9)

41. As a matter of fact since the trained nurse was born she has been found better fitted than all others for special occupations which too have developed as new fields in recent times. There have been certain advantages in the way of steady employment, fixed hours, lessened menial work and sometimes greater variety of action and less direct supervision in that they are not subject constantly to "orders". These fields are cited and used as lures to get girls to enter nursing by training school supervisors and they are just as attractive to lead them away from the bedside after graduation. Only marriage takes a greater toll among them.

42. A recent school bulletin giving information about the school has a page as follows:

#### "FIELDS FOR THE QUALIFIED NURSE"

43. "INSTITUTIONAL WORK—As superintendent of a hospital or principal of a school of nursing, as head nurse in hospital wards or operating rooms, as supervisor of dispensaries and clinics, there are always opportunities for rapid advancement."

44. "EDUCATIONAL WORK—As teachers of health and hygiene in public and private schools, as director of health education in voluntary organizations, as nutritional workers with public health associations, the demand far exceeds the supply."

45. "PUBLIC HEALTH—As visiting, school, child welfare, medical social service, and industrial nurse, there are unlimited opportunities for full expression and use of all one's intellectual facilities, executive ability, and instinct of service, since public health nursing has become vitally important in the public health campaign."

46. "PRIVATE DUTY—As a private duty nurse, the scope for usefulness is boundless. Contact with the individual and the family and her service to them makes her a strong influence in the public health of the community."

47. "GOVERNMENT SERVICE—As an army, navy, federal public health or Red Cross nurse, a young woman may serve her country in peace and in war, at home and abroad. In the army a nurse has rank such as second lieutenant, first lieutenant, captain and major."

48. "MISSIONARY WORK—Home missions in Labrador, Alaska, the mountain regions of the south, and the Indian reservations need nurses. Foreign missions in China, India, the Near East and elsewhere call unceasingly for nurses."

49. "HOME LIFE—As a mother, wife, or sister, a nurse's course is the best possible foundation for a satisfactory family life."

50. Most of these fields require some special preparation and the hospital is expected to give this training also.

51. A nurse says:

"We must first consider the needs of the nurse—what she requires to fit her to carry out the duties which she will be expected to perform when she has been graduated from the school. There are these essentials: (1) She should be equipped to give efficient, intelligent bedside care to the sick; (2) She should have the knowledge and the desire to assist in teaching the prevention of disease; (3) She should have a foundation for any branch of the work which she may desire to follow; (4) She should be fitted to take her place as a useful citizen in the community. The obligation



of the hospital to the student nurse then would be to provide facilities for equipping the nurse to give the best possible service along these lines." (5)

52. The elaboration of the training of nurses has increased the cost of training them to the point where it is an expense not met by the value of the labor they render and has become a burden which constitutes one of the hospital's modern problems. They ask that it be made still more expensive by giving such a foundation as will fit her "for any branch of this work which she may desire to follow"!

53. It is no wonder that hospital superintendents are "a little weary" of being ordered to increase their burdens when many times they have to meet their already existing deficit by some form of begging.

54. This gives us the general drift of things to be expected in the future but where we will land cannot be foretold.

#### COMPLAINTS OF PRESENT NURSING SERVICE

55. The complaints made of the modern nurse and nursing education responsible for her are of two kinds, those in the hospital and those in the home. A hospital is a substitute for a home just as is a hotel. The hotel men understand this and usually cater to their guest's desires accordingly. They even post rules to the effect that, "The guest is always right." They pretend to let the guest rule as he does in his home and some hotels even do give a sense of comfort much like a home.

56. The hospital is used as a substitute for home because it has advantages that the home cannot have for the particular needs of those in distress. But there is a total loss of home atmosphere in modern hospitals excepting in some small ones. Sick folks are usually self-centered and sensitive and need careful handling.

57. The modern training school is a well organized institution which exists for the training of nurses and not for the care of patients. This is impressed upon one regularly. The ideal of service is possibly talked about but it is not lived up to excepting in some Sisters' hospitals where that spirit survives as a reproach to others. It is forgotten that we learn best by doing, and rendering service is best learned by giving it.

58. The pupils are younger and less considerate than formerly. This is shown in their noisiness, their mechanical performance of duties and their lessened humility when things are forgotten or mistakes are made. The little sympathetic touches which endear attendants to recipients are far too seldom given by these newer youngsters whose attention is not focused on personal service.

59. The atmosphere of an institution is always a reflection of its executives and their ideals; training schools are no exceptions. There is a tendency to militarize nursing establishments. No surer way has been invented of producing a cold-blooded routine individual! The present superintendent of nurses is a desk official, who sits in an office calling in this one and that, issuing orders while remote from the field.

60. A comparison in an institution observed in our own state can more readily show this great change.

61. Some years ago this place had as superintendent of nurses a woman who had the notion that hospitals existed for suffering human beings and that training schools existed to train nurses in the ways of relieving this suffering by the practice of the art until proficiency was obtained. She made her rounds daily, saw every patient at

least casually, and took particular notice of those who were most sick. She turned the typhoid and others to look for the telltale redness of too long pressure, she visited the nursery and looked at babies' bottoms for the redness of too infrequent changes, she followed up complaints personally and had a way of smoothing out troubles. She constantly drilled into the pupils that thorough and considerate attentions to the patients were important. She was not above showing a pupil how best to do some particular work. She taught classes and demonstrated technic. If she had an office and desk of her own it was not known. She spoke kindly and freely to her students, she was their best friend. To her they went from choice with their troubles, her nurses respected her and were up on their toes to please her which they knew they could best do by pleasing the patients. Her graduates boast of their training to this day and they were a joy to the physicians whom they assisted.

62. Now this same place, which has grown some, is a different institution. The superintendent of nurses has an office and a desk of her own. Here she sits all day long being very seldom seen on the floors. She forbids the nurses speaking to her when she is met in the halls unless she first speaks. One hour a week is given to pupils who want an interview with her. If the student feels that her need is urgent she must send in a written request for an appointment, stating the reason for her seeking an interview outside of the regular hour. If this reason is satisfactory she is sent a written notice of the appointed time to come to the office. If not she may not be answered or may get a denial of her request. The seniors and freshmen are ordered to have nothing to do with each other when off duty. A full time teacher in this place once boasted of the fact to her class that she was not interested in patients and did not care to know anything of them, her duty was teaching! Among other things she gave two whole hours to telling these young women about opsonins and allied bodies and quizzing about them.

63. This whole grotesque attitude is surely reflected in a most unmistakable manner when the patient is reached. This surely is not like home and those physicians who served in the late war will notice the familiar ear-marks of a systematic suppression of the individual. Such a place cannot turn out nurses whose first thought is consideration for their charges.

64. There is certainly a lessening of the ability on the part of nurses to adapt themselves to the patient's needs and to the home. Seldom can you find one now who in a pinch will help with the housework, help get the children off to school, do some of the cooking, etc., as did her predecessor. She stands aloof and must herself be served. Much of the mutual confidence of nurse and patient is gone as a result. She refuses to go to the country, to care for contagious cases, to do night duty, and many will not do private duty outside at all but seek hospital cases only. Of course a large percentage desert individual nursing entirely for some of the numerous allied fields open to nurses.

65. Evidently the nurse of a generation ago is going with the old-fashioned doctor to join the dodo.

66. The nurses' hours are as fixed as the phases of the moon. In doing twenty hour duty she must have her four hours off in the afternoon between one and five o'clock and no other time. If the recently delivered mother is advised



by her physician to get out afternoons for the air and sunshine she must get a "practical" nurse to care for the baby lest it be alone at these times. And even the anxious day after the delivery they must get away. If death approaches, the nurse is apt to suggest a relief rather than a day or two of longer service. Her hours must not be dislodged any more than the equinoxes. In the hospital when patients require more than an ordinary routine care the floor supervisor or students suggest to relatives that a "special" be employed. An extra effort is hardly to be considered. Rarely do they make the suggestion to the doctor first.

67. Twenty hour duty nurses, too, are going. Twelve hour duty is the vogue. No matter how easy the case and regardless of the fact that often twenty hour nurses are not disturbed all night, they will serve but twelve. If more care is needed it means two nurses, an entirely hopeless thing for many people.

68. And now a peculiar charge is to come. It is said that nurses are over educated. They are made to drink too deeply of the fountain of learning. This would seem to be an impossibility, yet observation shows that, whether it is the amount of learning or the manner of its acquisition, it is more difficult to get the desired service from the higher trained ones. Every physician has wondered at times if too much teaching away from the bedside was given at the expense of more desirable habits of application formed at the bedside. The tendency is to cut contact with the patients to the minimum.

69. One can view with amused sympathy the situation arising when one of the older non-progressive physicians has fallen afoul of an up-to-date super-nurse trained better than he in medicine. But does she give the patient enough more physical and mental comfort to pay for the stubborn resentment which meets her superciliousness?

70. This over-training has been commented on forcibly by others.

"Some of the criticism of the present nursing situation has been malignant and almost all of it has been non-constructive and ill formed. It has quite completely lost sight of the part the nurse has borne in the development of the practical medicine in its present stage, and of the part she is to bear in its future. The trained nurse made the modern hospital what it is and all the other activities that go on under its roof depend upon her faith and zeal for their success, and if it is to the hospital and its development that we look with hope for the future we cannot afford to ignore the conditions that made her what she is.

71. "When one considers the difficulties and hardships under which this was accomplished, how the nurses' training school of the modern hospital was built up brick by brick while all the time the heavy necessity of actually caring for the sick seemed to interfere with an orderly and scholarly instruction in so many things that a nurse ought to know; when one considers all this, and at the same time thinks of the splendid nurses that old chaotic lack of system turned out, one is inclined to wonder, and unless his faith in book-learning is Hebraic in intensity—inclined to doubt. It would be unfair to nursing and to medicine not to ask what was what in the tradition of nursing that was thus established and what is it that we fear may be lost.

72. "It seems to us: That nursing requires a spirit of service, that nursing is a craft, as is medicine, in which knowledge and skill combine. This spirit can only be transmitted by a fellow learner—in line of duty. Thus, discipline can only be learned by actual responsible labor. Thus, craft can only be learned by repeated trial and is not fixed until it has been passed on to another.

73. "Is it possible that we are right? Is it possible that a little pedagogy is a dangerous thing and that an adequate dose of the real substance would restore faith in the axiom that we learn to do by doing? Is it possible that nursing and medicine cannot be taught, but must be learned under the lash of responsibility? Is it possible that teaching may be increased and learning diminished and that this unhappy process may even be carried to such degree that the precious year of the novitiate in the discipline of nursing may be so attenuated as to be almost lost? Let us not turn backward. God forbid! But in our striving forward let us not lose the virtue of the past." (11)

#### 74. Again:

"First and foremost—skill and intelligence in carrying out the treatment ordered, in contributing to the comfort of the patient in every particular, in detecting the early signs of an altered condition, threatened or impending, and a knowledge of the first aid steps to be taken to combat disaster. Also a habit of observing and recording concisely the daily progress. The training for this should be eminently practical, at the bedside and with the patients. Theoretical instruction should be used to explain only the nurse's problems, not the doctor's.

75. "I recently picked up a nurse's text book on pharmacology. I hastily put it down and passed on. I feared that I might be questioned about its contents and would display my ignorance. And so with bacteriology and pathology. I am told that a practical knowledge of bacteriology is necessary to the nurse if she is to understand the dangers of infection and transmission of contagion. And so an incubator is installed in the training school and pupil nurses watch the cultures grow, and peer into a microscope. And an autoclave is installed to teach sterilization! This might be utilized as a part of post-graduate training for those who take up operating room work. But for the rank and file the use of the fish boiler, the saucepan and the oven are of infinitely more importance.

76. "In my opinion training schools would be better served by cooking instructors with slight knowledge of dietetics, than by dietitians with slight knowledge of cooking. 'Knowledge is power' but 'a little knowledge is a dangerous thing.' A pseudo scientific veneer is not only a waste of time but there is great danger that the 'woods cannot be seen because of the trees.'

77. "Thirty odd years ago, when I was resident in a small special hospital I had the privilege of being associated with a nurse just recently graduated from one of the large general hospitals. From her I was proud to learn many nursing duties such as the making of a bed, fixing the draw sheet, posturing for comfort, the compounding and proper method of applying a mustard paste, etc. Her duty, as she interpreted her calling, was first meticulous attention to the attending physician's orders: secondly, and of equal importance, considering the comfort and well being of the patient in every detail. For many years she has held an important supervising position in a large hospital. But she still considers as paramount the comfort of the individual patient. We call her the "ideal nurse." The influence of her example and devotion upon the pupil nurses under her control is beyond computation. Her ambition is to nurse—to care for the sick—and she does not allow accessories to cloud her vision." (12)

78. One hospital superintendent, commenting on the curriculum advised by the committee on nursing education of the Rockefeller Institute, says:

79. "On reading this through I feel like the Harvard student, who, after one of his courses of intensive study, was asked what he thought about it: "Well, Doc!" he said, "I feel just numb."

80. "As a curriculum for a woman doctor it is inadequate; for a nurse it is excessive and superfluous. The committee appears to look upon a nurse as a person to be trained to become a sort of doctor's assistant. This is not her function. Her duty is to carry out accurately the instructions of the doctor as to the nursing of the patient; it is not her duty to assist in treating the patient. The argument that she should be in a position to understand all that the doctor is doing and ordering is fallacious. To do so she would have to have a full medical education, and become a doctor herself.

81. "A curriculum such as that outlined, though it looks well on paper, will fail in practice. What the nurse will be taught will be beyond her powers to absorb in the time allotted, and she will only get a dangerous smattering of many subjects which she cannot master thoroughly. It is far better that she should accept a more modest program and learn it thoroughly." (6)

82. Another complaint is the rising cost of nursing. With the higher entrance requirements, the longer courses, and the elaborate training it is to be expected that the nurses' wages will go up. It creates difficulty when it is higher than the wage of the machine hand whose wife she is serving, and when she refuses twenty hour duty and gives but twelve it is impossible for him to employ her and her sister of a like mind. The super-nurse is becoming a luxury above the reach of many. The trained nurse must always get more than the type of untrained factory worker so much in demand now that he sets the wage scale for both male and female workers. A simple factory hand cannot expect to hire a nurse at a less wage than he gets or even the same.

83. That there is a need for just plain nurses is true and the hospital is the place for training this kind. The specialist should obtain her training by post-graduate instruction after a basic course of the routine, direct service type, for in no other manner can a patient's view point and problems be understood. Physicians feel that the dutiful nurse is disappearing. One famous physician thus voices his belief as to what nursing should be:

84. "After all, the private practice—the actual nursing care of the man, woman, or child is and must always be the first consideration. It is by such individual care that all our nursing schools and all our higher education shall be adjudged. The reputation of nursing as a service profession is in their hands. We may finally say that the aim and the object of nursing as a service profession is to create the actual nurse. By the actual nurse I mean the nurse who cares for and comforts and makes better the individual patient, be he rich or poor. For such is the service, after all, for which the profession was created and exists. It is a service profession."

#### RECOMMENDATIONS

85. Your committee respectfully suggests that the following principles be endorsed by the Michigan State Medical Society:

A. Nurses are helpers and agents of physicians' not "co-workers" or "colleagues."

B. Physicians should have a part in the direction of the training of nurses and in its limitations as should the hospitals which give the training.

C. The training of nurses should be simplified and the time of under-graduate training reduced to not more than two years.

D. If this shorter course turns out too many nurses, hospitals should employ more graduates instead of lengthening the course of training.

E. The only way to make the kind of nurse which is desired is by the routine giving of service under supervision, i.e., the apprenticeship system. This must be maintained.

F. The necessary training for the numerous special fields open to nurses should be obtained in post-graduate study at the expense of the nurse or our public educational system and not at the expense of the patient or the hospital.

G. To lessen the cost of nursing will be difficult. It can be helped some by:

1. The introduction of instruction in simple nursing technic in our public schools so that home nursing by members of the family and especially mothers can again be available to a greater degree in suitable cases.

2. The shortening of the present training course and pruning the curriculum of non-essentials.

3. The more frequent use of group and hourly nursing. These must always be of limited application.

4. The establishment of more hospitals and the more frequent use of them will help also. It is cheaper to patronize a hospital than a nurse in your home.

H. The power of licensing nurses should be put into the hands of a non-political board of educators with an advisory group of physicians and nurses.

Respectfully submitted,

Joint Committee on Nursing Education

J. G. R. MANWARING,  
W. K. WEST,  
F. C. WITTER,  
FRANK W. GARBER,  
C. E. BOYS,  
*Chairman*

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*Legislation:* Elsewhere in this issue will be found the report of your Legislation Commission submitting a new qualification act and amendments to our present Medical Practice Law. Members are requested to carefully read this report and recommendations and delegates are requested to ascertain local opinions in order that intelligent action may be recorded.

*House of Delegates:* Speaker Carstens states that the House will be called to order at promptly 10:30 a. m. and that the official order of business will be observed with parliamentary precision.

*County Society Activity:* The prestige and influence of County Societies may be materially evidenced when interest in community welfare is demonstrated. The Kent County Medical Society has achieved a commendable piece of community activity in the effort of securing the adoption of a pure milk ordinance for Grand Rapids. We quote the following from a local paper,

indicative of a well directed piece of public service:

#### A HEALTH VICTORY

With its all-important raw milk sections un-amended, and a change made only in the radius within which pasteurizing plants may operate for sale to this city, the commission has passed after long discussion a milk ordinance promising genuine protection to residents of Grand Rapids.

That is creditable to the good judgment and foresight of the commission. In face of the long list of epidemics caused by weak regulation in other cities its members would have been accepting a very large responsibility in hamstringing this wholly reasonable and practical measure. No man of intelligence and good will desires to imperil the lives of children either for a political purpose or to bolster the business of a small minority producing under unsanitary conditions.

The great majority of dealers and producers favored these regulations, which had been sponsored by the Kent County Medical Society, were based on recommendations and tests of the federal and Michigan health services, and represented the minimum interference which would insure safety. The doctors, health officials and public spirited dealers and producers who have supported this measure throughout a long and tedious debate have placed themselves in the community's debt.

*Politics:* No—we suggest no urge as to what your personal ballot shall record. Vote—yes we urge that you exercise that right. In doing so suggest that you recall past records. Remember, too, that our present administration vouched to us the independence of our professional rights and closed the doors of short-cut aspirants. Furthermore, assurance is given us that our ideals will be an administrative program. Hence, the query is germane: "Why swap horses amid-stream?"

*Invited Guests:* The several sections have invited as speakers on their several programs the following distinguished guests:

Marsh W. Poole, Windsor, Ont.  
Wm. P. Tew, London, Ont.  
Robert T. Morris, New York City.  
Henry J. Prentiss, Iowa City, Iowa.  
Arthur J. Bedell, Albany, N. Y.  
George F. Suker, Chicago.  
F. S. Dolley, Los Angeles, Cal.  
Wyman Whittemore, Boston  
Carl A. Hedblom, Chicago.  
George E. Crile, Cleveland.  
Arthur W. Allen, Boston.  
Philip D. Wilson, Boston.  
F. N. G. Starr, Toronto, Ont.  
Carl Eberbach, Milwaukee.  
Edward Cathcart, Cleveland.  
Henry J. John, Cleveland.

*Annual Meeting:* This issue contains the official program for our Annual Meet-

ing to be held in Detroit September 26-27-28. We suggest a careful reading of this program in order that you may gain its attractive features and obtain the urge to attend these instructive sectional meetings. We further suggest that you obtain your hotel reservations now.

*Delegates:* Delegates representing County Societies are urged to note that the first session of the House of Delegates convenes at 10:30 a. m. on September 26th. The Speaker has appointed a credentials committee that will be on duty at 9:30 a. m. Delegates' credentials have been mailed. These credentials are to be presented and approved by the credential committee before a delegate can be seated.

*Committee Reports:* By repeated writing we have obtained many of our committee reports which are published in this issue. Delegates are urged to read these reports so as to be familiar with them when they come up for action.

*Registration:* The Registration bureau will be opened on September 26th at 9:30 a. m. and continue through till 2:00 p. m. on September 28th. Every member is urged to register, receive the official badge and program.

*Headquarters:* The Book-Cadillac hotel is official headquarters where all our meeting will be held. A scientific exhibit and a commercial exhibit will be found on the ball room floor. All the section meetings will also be held on that floor.

#### CLINICAL CONFERENCES

Councilor Districts Post Graduate Conferences will be held in Fremont on August 30th. Regional clinics will be held in Grand Rapids, October 23-24th, Flint October 24-25th, and Jackson October 24th. The programs for these last three clinics will be announced in our October issue. As advance information we impart that Dr. M. L. Harris, president-elect of the A. M. A. will appear on the Flint and Grand Rapids programs.

*Illegal Practitioners:* We are informed that all violators of the Michigan Medical Practice act may be called to account if notices of infractions are filed with prosecuting attorneys. This information comes through reliable sources from the attorney general's office. The intimation is imparted that if any county prosecutor fails to prosecute when reliable information is presented the attorney general will com-



pel such action by the county prosecutor. Further, that the state police are available for securing evidence. Hence this suggestion that county societies through their officers or a committee call upon your local prosecuting attorney and request him to investigate and proceed against those against whom you file complaint.

*Moving Pictures:* On Thursday afternoon five subjects, goitre, infections of hand, hernia, intestinal peristalsis and confinement, will be shown through twelve reels of moving pictures. The program committee feels this will be a most entertaining and educational feature.

*Scientific Exhibit:* On the Ball Room floor Doctors Davis and Evans will show some interesting pathological and x-ray exhibits.

*Medical Laws:* This issue contains the proposed law and amendments submitted by our legislation commission. Please study them and advise your local delegates as to your views. The commission's report will be acted upon at our annual meeting.

*Maternal Mortality:* Among the committee reports to be found in this issue is a very important study of maternal mortality in Michigan. We suggest that every member become familiar with the results of this state survey.

#### SPECIAL MEETING OF THE COUNCIL

In response to the call, a special meeting of the Council of the Michigan State Medical Society was held in the Northwood hotel, Cadillac, on July 28, 1928.

Councilor Ricker of Cadillac, with the support of the local profession, entertained the Council at dinner at 6 p. m., at the new Northwood hotel, which was placed at the disposal of the Council two days previous to its formal opening.

Following the dinner, Chairman Stone called the meeting to order. All the Councilors were present, together with President Randall, Secretary Warnshuis and the members of the Legislative Commission.

Chairman Kiefer of the Legislative Commission submitted the draft of the proposed new act and amendment to the present Medical Practice Act governing the practice of medicine. See this issue for full draft of these proposed laws.

A two hour discussion of these laws were engaged in.

On motion of Charters-Heavenrich, the

Council approved the Committee's report and the act and amendments submitted in its report, it concurred in the recommendations made and recommended that the report be published in the Journal and transmitted to the House of Delegates.

On motion of Corbus-Greene, the Legislative Commission was directed to incorporate in its report an amendment to the practice act that would restrain itinerant and sojourning doctors from practicing in our resort regions.

On motion of Bruce-Cook, the Chairman of the Council was directed to appoint a Committee of three to investigate existing facilities for the hospitalization of mental cases and to report its findings and recommendations to the House of Delegates.

The Council reviewed and informally discussed several of the existing medical problems of our state and the trend of medical practices. It was deemed that these conditions might well be cited to the House of Delegates in the Council's annual report.

The Secretary reported upon the program and arrangements that were being supervised and executed in preparation for our September annual meeting.

The meeting adjourned at 11:45 p. m.  
F. C. Warnshuis, Secretary.

#### MONROE COUNTY

Monroe County Society has followed its usual custom of adjourning for the summer.

Good news here is this: June 28, Monroe closed a drive raising \$206,000 plus for a fifty bed hospital to be maintained in Monroe by Sisters of St. Joseph, who have hospitals in Kalamazoo. Construction will start soon.

Yours respectfully,  
Florence Ames, M. D., Secretary.

#### OAKLAND COUNTY

Thirty-five members of the Oakland County Medical Society attended the monthly dinner and meeting held Thursday at the Indianwood Golf and Country club. Members enjoyed golf in the afternoon and were later served dinner at the club, after which the meeting was held.

Dr. Grover C. Penberthy, associate professor of clinical surgery in the Detroit College of Medicine and Surgery, addressed the society, his topic being "Appendicitis in Children." Following his address, the discussion was led by Dr. Palmer E. Sutton of Royal Oak and Dr. Campbell Harvey of Pontiac.

In the golf tournament in the afternoon the first prize was won by Dr. E. V. Howlett of Pontiac and second low score was turned in by Dr. Fred Reid of Clawson. Consolation prize went to Dr. Karl Zinn of Pontiac.

## SANILAC COUNTY

The Sanilac County Medical Society met August 21st at Hotel McDonald for the purpose of reorganization which was successfully carried out. The same officers held over until the December meeting.

Dr. Holdship and Dr. Healy of Huron County were present and discussed the feasibility of uniting Sanilac and Huron County Societies.

Dr. T. Heavenrich of Port Huron, 7th District Councillor, talked on a united meeting of Huron, Sanilac and St. Clair counties to be held on the lake shore in a short time.

After the adjournment of the meeting the physicians attended the Crippled Children's Clinic which was conducted by Dr. F. C. Kidner of Detroit.

At the banquet given by Doctors George, Evans and Martin Tweedie, the following physicians were present: D. D. McNaughton, Argyle; E. W. Caster, Yale; T. Heavenrich, Port Huron; E. Myer, Carsonville; J. Wallace, Elmer; W. B. Holdship, Ubley; L. E. Cochrane, Peck; J. E. Campbell, Brown City; R. G. Tuck, Brown City; Bruce Campbell, Detroit; S. A. Howard, Applegate; Charles S. Kennedy, Detroit; F. C. Kinder, Detroit; H. H. Learmont, Crosswell; N. J. McColl, Crosswell; G. Healy, Harbor Beach; R. B. Mitchell, Deckerville.

Interesting talks were heard from Doctors McNaughton, Heavenrich, Kidner and Kennedy.

**A BILL TO AMEND SECTIONS, 1, 3, 4 AND 9 OF ACT NUMBER 237 OF THE PUBLIC ACTS OF 1899, AS AMENDED, ENTITLED, "AN ACT TO PROVIDE FOR THE EXAMINATION, REGULATION, LICENSING AND REGISTRATION OF PHYSICIANS AND SURGEONS, AND FOR THE PUNISHMENT OF OFFENDERS AGAINST THIS ACT, AND TO REPEAL ACTS AND PARTS OF ACTS INCONSISTENT THEREWITH", BEING SECTIONS 6724, 6726, 6727, AND 6732. COMPILED LAWS OF 1915. AND TO ADD A NEW SECTION THERETO TO STAND AS SECTION 7 (a).**

THE PEOPLE OF THE STATE OF MICHIGAN ENACT:

Section 1. Sections 1, 3, 4 and 9 of Act number 237 of the Public Acts of 1899, as amended, entitled, "An act to provide for the examination, regulation, licensing and registration of physicians and surgeons, and for the punishment of acts inconsistent therewith", are hereby amended, and a new section to stand as section 7 (a) is hereby added thereto, said amended sections and new section to read as follows:

Section 1. The governor shall appoint, by and with the \* \* \* consent of the senate, ten resident electors of the state, who shall constitute a board of registration in medicine. \* \* \* The governor may select such appointees from the latest lists filed in his

office \* \* \* by the secretary of the Michigan State Medical Society, such lists to contain at least treble the number of names as \* \* \* there are members to be appointed. \* \* \* All persons so appointed shall be legally registered physicians of this state, shall be graduates in good standing of reputable medical colleges, and shall have been actively engaged in the practice of medicine in this state for at least six years immediately preceding the time of such appointment. \* \* \* The present members of said board shall continue in office until the expiration of the terms for which they were appointed, and their successors shall be appointed for terms of four years each. No member of said board shall belong to the faculty of any medical college or university. The governor shall also fill vacancies occasioned by death or otherwise, and may remove any member for the continued neglect of duties required by this act. Vacancies in said board shall be filled in accordance with the provisions of this act for the establishment of the original board, and a person appointed to fill a vacancy shall hold office during the unexpired term of the member whose place he fills. The business of said board shall be transacted by and receive the concurrent vote of from at least seven members.

Section 3. On and after the date of the taking effect of this act, all men and women who are not already legally registered under act number 237 of the public acts of 1899, and acts amendatory thereto, and who wish to begin the practice of medicine, surgery and midwifery in any of its branches, in this state, shall make application to the Board of Registration in Medicine, to be registered and for a certificate of registration. This registration and certificate shall be granted to such applicants as shall furnish satisfactory proofs of being at least twenty-one years of age, and of good moral and professional character, but only upon compliance with the following conditions contained in one or either of subdivisions one and two of this section; *Provided, That such applicants shall, in addition to complying with the requirements hereof, fully comply with any and all other conditions and requirements provided by law:*

First. The applicant shall be registered and given a certificate of registration if he or she shall satisfactorily pass an examination under the immediate authority and direction of the board upon the following subjects: Anatomy, histology and

embryology, physiology, chemistry and toxicology, bacteriology, pathology, diagnosis, hygiene and public health, medical jurisprudence, diseases of the eye, ear, nose and throat, obstetrics, gynecology and surgery, and such additional subjects made necessary by advances in medical education as the board may designate, said examination to be conducted as follows:

(a) The examination may be taken as a whole in all of the subjects as aforesaid, and shall be designated as the primary-final examination, or said examination may be divided into a primary examination, upon the subjects of anatomy, histology and embryology, physiology, chemistry and toxicology, and bacteriology, and a final examination upon the remaining subjects as aforesaid, not included in the primary examination;

(b) The applicant shall file with the secretary of the board, at least one week prior to an examination, an approved application, through a blank furnished by the board, covering the detail of his or her personal history, and preliminary and medical education, and such other evidence of qualification as the board may require;

(c) The board may make such rules and regulations governing the conduct of the examinations as it shall deem necessary, and wilful violation of such rules and regulations shall subject the applicant to the loss of the examination and fee;

(d) The examination shall be made as practical as possible in order to test the applicant's qualifications as a practitioner of medicine, the method of which shall be in accordance with the board's best judgment, and may be a written, clinical, laboratory or oral examination, or a combination of one or more of the above methods;

(e) An average percentage of at least seventy-five per cent of correct answers on all the subjects listed under this section, and of not less than fifty per cent on each subject, shall be required of every applicant: Provided, That in the case of a qualified applicant who has been in reputable and legal practice at least five years, at the discretion of the board, this requirement of minimum percentage may be modified by the board to meet the necessities of the individual case. An accepted applicant for the primary-final examination, or for the final examination, as noted in subdivision one (a) of this section, shall have a diploma from a legally incorporated, regularly established and recognized college of medicine within the states,

territories, districts and provinces of the United States, or within any foreign country, having as a minimum requirement a four years' course of eight months in each calendar year: \* \* \* Students of medicine in regular attendance at a recognized medical college and endorsed by said board as having fulfilled the legal requirements of the state for entrance to, or matriculation in, recognized medical colleges, and who have completed, in accordance with the board's adopted minimum standard of medical college, through attendance and examination, and not prior to the termination of the second year in such institution, among others the subjects of anatomy, histology and embryology, physiology, chemistry and toxicology, and bacteriology, shall have the right to a primary examination, as recorded under subdivision, one (a) of this section, upon prescribed subjects, said examination to be held at such times and places as may be determined by the board, and to receive from the board a certificate showing the credits received in the several subjects upon which an examination shall have been had as aforesaid, and such credits obtained shall, at the election of the student, be included in and form a part of the examination heretofore called the final examination under subdivision one (a) of this section: Provided, That subsequent to graduation from a recognized medical college, in said final examination for a certificate of registration the applicant shall, if presenting said credits to the board at the time of his or her application for examination be examined only in those remaining subjects prescribed under subdivision first of this section and which have not been listed as subjects of aforesaid primary examination. The applicant shall pay to the board a fee of twenty-five dollars prior to the examination, divided as follows: Ten dollars for the primary examination, and fifteen dollars for the final examination. If such examinations are taken together, or as a whole, the fee shall be twenty-five dollars for such primary-final examination. No additional fee for registration shall be charged to those who successfully pass the examinations. The board shall, in the recognition of medical colleges, in its discretion, list such colleges in three or more classes or groups: Group one including those colleges which fulfill the advanced requirements of this act and which maintain the board's standards of preliminary and medical education; group two including those colleges



which have fulfilled the standard of medical education demanded by this state at the date of the diploma; and group three including those colleges whose courses are recognized only for advanced standing in recognized colleges listed under group one: Provided, That a diploma issued by a medical college listed by the board in one or more of the groups or classes as aforesaid, shall be recognized as a qualification under this act, in the event only of its representing the actual standards of preliminary and medical education within the provisions of this act. The board of registration in medicine shall, from time to time adopt minimum standards of preliminary and medical education, and no high school, academy, college, university or medical college, or other institution or board, shall be approved and designated or its diploma or certificate be recognized by said board under subdivision one of section three of this act, unless in the judgment of the board, it conforms with such standard.

Second. The applicant may, at the discretion of the board, be registered and given a certificate of registration if he or she shall present satisfactory proof of the possession of a certificate of registration or license which has been issued to said applicant within the states, territories, districts or provinces of the United States, or within any foreign country, where the requirements for the registration of said applicant at the date of his or her license shall be deemed by said board of registration in medicine to be equivalent to those of this act. The fee for registration from applicants of this class shall be fifty dollars, and for the endorsement of a certificate to another state five dollars;

Third. The board is authorized to issue a license or certificate of registration to any person who desires to practice a system of treatment of human ailments or diseases, and who does not in such treatment use drugs or medicine, internally or externally, or who does not practice surgery or midwifery, under the provisions of this act; Provided, \* \* \* *That such applicant for such license or certificate shall have complied with any and all educational requirements which are now or hereafter may be required by law for license to practice the healing art in any of its branches*, and shall pass an examination before the board upon the following subjects: Anatomy, histology and embryology, physiology, chemistry, bacteriology, pathology, diagnosis, hygiene and public health. This examination shall be

concurrent with and equivalent to the examination provided for practitioners of medicine under section 3, subdivision 1, of this act, and shall be in harmony with the provisions of this section and subdivision covering such examination in the subjects as above specified: Provided, however, That such examination shall be a continuous one and not subject to a division into a primary and a final examination. The fee for such examination shall be fifteen dollars. A practitioner under this subdivision shall not be permitted to use in any form the title of "doctor" or "professor" or any of their abbreviations, or any other sign or appellation to his or her name which would in any way designate him or her as a physician or surgeon qualified under the provisions of section 3, subdivisions 1 and 2 of this act, or in violation of the provisions of this act. All persons granted a certificate of registration or license under the provisions of this subdivision 3, shall also conform to the provisions of act number 237 of the Public Acts of 1899, and acts amendatory thereto, except as provided in this subdivision: Provided, That all practitioners described in section 3, part 3, who have been granted a diploma by a college incorporated for the purpose of teaching their method of treatment and who file with the state board of registration in medicine prior to October 1, 1913, an affidavit stating that they have practiced in the state of Michigan for a period of two years prior to September 1, 1913, shall be registered and authorized to practice without examination under the provisions of section 3, part 3, of this act. A fee of five dollars must accompany each application for registration under this provision;

Fourth. If any person shall unlawfully \* \* \* *cause* himself or herself to be registered under this section, whether by false and untrue statements contained in his application to the board of registration of medicine, or by presenting to said board a false or untrue diploma, certificate or license, or one fraudulently obtained, he shall be deemed guilty of a felony, and upon conviction thereof shall be punished by a fine of not less than three hundred dollars nor more than five hundred dollars, or by imprisonment at hard labor for not less than one year nor more than three years, or both, at the discretion of the court, and shall forfeit all rights and privileges obtained or conferred upon him by virtue of such registration;

Fifth. Any person who shall swear

falsely in any affidavit or oral testimony made or given by virtue of the provisions of this act, or the regulations of the board of registration of medicine, shall be deemed guilty of perjury, and, upon conviction thereof, shall be subject to all the pains and penalties of perjury;

Sixth. The board of registration of medicine may refuse to issue *and/or \* \* \* make, revoke or suspend* a certificate of registration or license provided for in this section, to any person *found by a majority of said board* to be guilty of grossly unprofessional and dishonest conduct. *Provided, That the board shall refuse to issue or revoke any such certificate until reasonable notice of such refusal or intention to revoke or suspend shall have been given to the applicant therefor or holder thereof, together with a notice of the specific charges against him and the time and place of hearing thereof.* The words "unprofessional and dishonest conduct", as used in this act, are hereby declared to mean:

(a) The procuring, aiding or abetting in procuring a criminal abortion;

(b) The obtaining of any fee on the assurance that an incurable disease can be permanently cured;

(c) The wilfully betraying of a professional secret;

(d) All advertising of medical business in which grossly improbable statements are made, or where specific mention is made in such advertisements of venereal diseases or diseases of the genito-urinary organs;

(e) Having professional connection with, or lending one's name to an illegal practitioner of medicine; or having professional connection with any person or any firm or corporation who advertises contrary to the provisions of this section, or with any person who has been convicted in a court of competent jurisdiction under the provisions of this section;

(f) All advertising, of any nature or kind, of any medicine, or of any means for the regulation or re-establishment of the menses;

(g) All advertising of any matter of any obscene or offensive nature derogatory to good morals or contrary to act number 62 of the Public Acts of 1911;

(h) Employing or being employed by any capper, solicitor or drummer for the purpose of securing patients; or subsidizing any hotel or boarding house with a like purpose, or paying, or offering to any person, money or any other thing of value with a like purpose, or advertising to do

so in any form whatsoever; or the division of fees in a consultation or a reference of a patient to a specialist, when no actual professional service is rendered by the physician referring the case, without the knowledge of the patient or the person concerned in the payment thereof;

(i) Being guilty of offenses involving moral turpitude, habitual intemperance, or being habitually addicted to the use of morphine, opium, cocaine, or other drugs having a similar effect; or of prescribing or giving away any substance or compound containing alcohol or drug for other than legal and legitimate therapeutic purposes;

Seventh. It shall be a misdemeanor for any person to be guilty of "unprofessional and dishonest conduct" as defined in this act. Any person who has been issued a certificate of registration or license under this act, and who shall be charged with the commission of such misdemeanor, shall be tried in a court of competent criminal jurisdiction, and upon conviction thereof shall be fined for each offense not to exceed two hundred and fifty dollars, or shall be imprisoned in the county jail not to exceed three months, or may be both fined and imprisoned, in the discretion of the court. The creation of such misdemeanor by this act shall not be construed to supersede any existing remedy or punishment, whether civil or criminal, for any act embraced within the provisions of this act, but shall be construed to be in addition thereto.

*In addition to the provisions hereinbefore provided for the refusal to issue, revocation or suspension of a license or certificate, the board of registration in medicine may, upon the filing with it of a duly certified copy of a final conviction obtained in accordance with the provisions of this act, revoke or suspend for a limited period, not less than six months, the certificate or license of the person so convicted. The said board of registration in medicine may also revoke any certificate of registration or license of any person guilty of a criminal offense created by or embraced within the provisions of this act, or within the provisions of any state, provincial, territorial or federal act in the United States or in foreign countries, when such criminal offense or such fraud or perjury shall have been legally established in a court of competent jurisdiction. Said board may also revoke any certificate of registration or license heretofore or hereafter granted upon mistake of material fact or by rea-*



son of fraudulent misrepresentation of fact by such applicant. Any person charged with a violation of the provisions of this subdivision 7 of section 3 shall have a fair hearing before the board, upon sufficient notice of such hearing: Provided, That this section shall not apply to such forms of contract practice as are from time to time endorsed by this board.

Section 4. The person receiving a certificate of registration shall file the same, or a certified copy thereof, with the county clerk in \* \* \* each county \* \* \* where he practices, and said clerk shall file said certificate or the certified copy thereof, and enter a proper memorandum thereof in a book to be provided and kept for that purpose, and may collect therefor a fee of fifty cents for each certificate or copy thus filed. And said county clerk shall, on the first day of each month, furnish to the secretary of said board a list of all certificates filed in his office during the preceding month on a blank provided for that purpose, and upon notice to him of the change of location or death of a person granted a certificate, or upon the revocation of the certificate granted such person, said county clerk shall enter at the appropriate places in the record so kept by him a memorandum of said facts; so that the record so kept by said county clerk shall correspond with the records of said board, so kept by the secretary thereof. In case a person having thus filed a certificate shall move into another county of the state, he shall procure from said county clerk a certified copy of said certificate, and file the same with the said county clerk of the county to which he shall so remove. Said county clerk shall file and enter the same with like effect, as if the same was the original certificate.

Section 7 (a). *The attorney general, prosecuting attorney, board of registration in medicine, or any citizen of any county, where any person shall engage in the practice of medicine, chiropractic, or drugless healing as provided herein, without first having obtained a license so to do, may maintain a suit in the name of the people of the state of Michigan in the circuit court in chancery of the county in which any such person shall engage in practice to enjoin such person engaging in such practice until he shall secure the license or certificate provided for herein. And any person who has been so enjoined who shall violate such injunction shall be punished for contempt of court provided that the institution of such proceedings*

*shall not relieve such person so practicing without a license or certificate from a criminal prosecution therefor as provided by law but such remedy by injunction shall be in addition to any remedy now provided for the criminal prosecution of such offender.*

Section 9. Any person who shall append the letters "M. D." or "M. B." or other letters in a medical sense, or shall prefix the title "doctor" or its abbreviation, or any sign or application in a medical sense, to his or her name, or who shall own or operate an institution where treatments for human ailments are given without being given under the full direction of registered physicians and nurses, it shall be prima facie evidence of practicing medicine within the meaning of this act. In this act, unless otherwise provided, the term "practice of medicine" shall mean the actual diagnosing, curing or relieving in any degree, or professing or attempting to diagnose, treat, cure or relieve any human disease, ailment, defect, or complaint, whether of physical or mental origin, by attendance or by advice, or by prescribing or furnishing any drug, medicine, appliance, manipulation or method, or by any therapeutic agent whatsoever.

**A BILL TO PRESCRIBE THE EDUCATIONAL QUALIFICATIONS OF APPLICANTS FOR LICENSE TO PRACTICE THE HEALING ART, AS DEFINED HEREIN; TO CREATE A BOARD OF PROFESSIONAL REGISTRATION, AND TO DEFINE THE POWERS AND DUTIES THEREOF; AND TO PRESCRIBE PENALTIES FOR VIOLATIONS OF THE PROVISIONS HEREOF.**

THE PEOPLE OF THE STATE OF MICHIGAN  
ENACT:

Section 1. A Board of Professional Registration to consist of nine members is hereby created to carry out the provisions of this act. The members of said board shall be appointed by the governor within thirty days from the effective date of this act, and shall be chosen from teachers or professorial rank at any university or college in this state authorized by law to confer the Bachelor of Science, Bachelor of Arts, Master of Science or Master of Arts degrees, except those schools or colleges known as normal schools or normal colleges. Three members of said board shall serve for a term expiring the first day of July, 1931; three members of said



board shall serve for a term expiring the first day of July, 1932; and three members of said board shall serve for a term expiring the first day of July, 1933, and upon the expiration of the terms of each of such members, the governor shall appoint their successors for terms of six years. The governor shall have the power to fill any vacancy on said board, and the person appointed to fill any vacancy shall serve for the unexpired term of the office vacated.

Section 2. The members of the Board of Professional Registration shall, within two weeks after their appointment, meet at the state capitol at Lansing, and shall then elect a president and secretary from their own members, said officers to hold office for a period of one year or until their successors are elected. The secretary shall execute and file with the secretary of state a bond running to the state of Michigan in the penal sum of five thousand dollars, with sufficient sureties, to be approved by the governor, for the faithful discharge of his duties. Said board shall meet at such times and places as shall be determined by said board for the purpose of conducting the examinations hereinafter provided for, and for the purpose of any and all other business to come before said board. Not less than six members shall constitute a quorum of said board for the transaction of business: Provided, That any action taken by said board shall require the affirmative vote of five members thereof. The members of said board shall receive as compensation not to exceed ten dollars per day for each day said members shall attend the active session of said board, and their necessary traveling expenses incident to the performance of their duties hereunder: Provided, That the secretary of said board shall receive a salary of eighteen hundred dollars annually, to be paid at the time and in the manner as salaries of state officers and employees are paid.

Section 3. The term "art and science of healing" as used herein, shall mean to examine into the fact, condition or cause of human health or disease, or to treat, operate, or advise for the same, or to undertake, offer, advertise, announce or hold out in any manner to do any of said act, for compensation, direct or indirect, or in the expectation of compensation: Provided, That nothing in this act shall apply to applications for a license to practice dentistry, optometry, chiropody, nor to those persons seeking a license to confine their ministrations to the sick or afflicted,

as nurses, nor to those who administer to the sick or afflicted by means of prayer.

Section 4. On and after the effective date of this act, all persons who are not the holders of legal licenses to practice the art and science of healing, shall before making application to any board of registration having the power to issue licenses to practice the art and science of healing in any of its branches, secure from the Board of Professional Registration the following certificates:

(a) A certificate issued by said board and signed by its president and secretary, that such person has satisfactorily completed a four years' high school course, or equivalent high school credits.

(b) A certificate issued by said board and signed by its president and secretary that said person has secured sixty hours of collegiate credit as hereinafter specified and has satisfactorily passed the examination before said board, if, in the opinion of said board, such examination shall be necessary. No Board of Registration or examination having power to issue licenses to practice the art of science of healing, in any of its branches, shall accept for examination any person who is not the holder of the certificates specified in this section.

Section 5. In order to secure from said board the certificate specified in subdivision (a) of section 4 hereof, each person shall fill out a blank to be provided by the board for such purpose, upon which shall appear the name of the applicant, place and time of birth, nationality, name, place and time of attending the high school or schools, a list of credit units secured, and such other information as the board shall require, which blank shall be signed by the applicant and by the superintendent or principal of the high school attended. Upon receipt of such blank properly signed, the Board of Registration shall examine the same and if such high school credits equal a total of fifteen units, and said school or schools in which said credits were secured are on the approved list of the North Central Association of Colleges and Secondary Schools, or schools of equal rank therewith, said board shall issue to the applicant the certificate specified in subdivision (a) of section 4 hereof. Every application for such certificate shall be accompanied by a fee of one dollar.

Section 6. In order to secure from said board the certificate specified in subdivision (b) of section 4 hereof, each applicant shall fill out a blank to be provided by

said board, upon which shall appear the name of the applicant; time and place of birth, nationality, name of college, university or school attended and time of attendance, together with a list of college credits secured, which shall include English language, (grammar, rhetoric and English literature) six hours; biology, botany, zoology, general biology, eight hours; chemistry (inorganic, qualitative analysis, quantitative analysis, organic) eight hours; physics, eight hours; modern language (French or German or both) six hours; and such other information as the board shall direct. Said blank shall be signed by the applicant and by the proper college officers having knowledge of the facts therein contained, and shall be forwarded to the Board of Professional Registration, together with an examination fee of ten dollars, not less than ten days prior to the time of holding the examination hereinafter provided for.

Section 7. All persons who have complied with the provisions of sections 5 and 6 hereof, and who shall have a minimum of sixty hours of college credit from a college or university on the approved list of the North Central Association of Colleges and Secondary Schools, shall be eligible for examination before the Board of Professional Registration, and shall be required to take the same at the discretion of the board, which examination shall be held at such time and place as shall be determined by the board. Such examination shall embrace the subjects enumerated in section 6 hereof, and such other subjects as the board shall determine: Provided, That such examination shall include at least eighty per cent of the sixty semester hours college credits claimed by the examinee; and provided further, That an average of at least seventy-five per cent shall be required for the passage of any examination, and no person shall be allowed to pass who shall receive a grade of less than fifty per cent on any one subject.

The board shall make such rules and regulations governing the conduct of examinations as it shall deem expedient, and wilful violations thereof shall subject the applicant to the loss of the examination fee, and shall bar him from the privilege of further examination for the period of two years. Each person who passes said examination shall be entitled to receive the certificate provided for in subdivision (b) of section 4 hereof; Provided, That the board may, in its discretion, accept in lieu of such examination, a bachelor's degree

from any college or university on the approved list of the North Central Association of Colleges and Secondary Schools, or a college or university of equal rank therewith.

Section 8. Any person who shall unlawfully obtain either of the certificates specified in section 4 hereof, shall be guilty of a felony, and upon conviction thereof shall be punished by a fine of not less than three hundred nor more than one thousand dollars, or by imprisonment in the state prison for not less than one nor more than two years, or both such fine or imprisonment in the discretion of the court.

Section 9. All sums of money received by said board shall be paid to the state treasurer not later than thirty days after the receipt thereof, and shall be credited to the general fund.

Section 10. All acts and parts of acts inconsistent herewith are hereby repealed.

### CLEAN SHIRTS

A modern hygienist has remarked that our conception of cleanliness has greatly changed with the advance in knowledge of the kinds of dirt, the degrees of dirtiness, and the nature of these dangers. We can no longer be satisfied, he adds, with physical or esthetic cleanliness, but must insist on biologic cleanliness. Invisible bacteria represent undesirable contamination quite as much as obvious matter out of place does. This indicates that in the ultimate analysis the services of a bacteriologist are required to make the distinctions between "clean dirt" and "dirty dirt." There is an implication, furthermore, that proper cleanliness affords protection against disease. Clean bodies require clean clothes. Heretofore the bacteriology of the latter has received comparatively little detailed consideration, but the improvements in the art of laundering are bringing the subject into somewhat greater prominence and may contribute something to the problem of the possible part played by clothing in the dissemination of micro-organisms. Thus, a recent study at the University of Nebraska in Lincoln indicates clearly the increment in bacteria that accumulate in undergarments as they are worn more frequently without washing. From an average count of about 400,000 per square inch after one use, the number increased to nearly 10,000,000 after a shirt was worn six times. The effect of laundering is represented by a reduced count of 1,000 or less. Washing alone is quite effective, but the drying process finishes the elimination satisfactorily. Sun drying is particularly potent. The organisms present on worn shirts were those common to air, soil and skin. *Micrococcus albus* (*Staphylococcus*) and *M. aureus* were most frequently found; streptococci also were often present. The large number of hemolytic types observed suggests that underclothing should be changed frequently and laundered by a process likely to check their development.—*Jour. A. M. A.*, June 2, 1928.



# THE DOCTOR'S LIBRARY

Offering Suggestions and Recommendations

## HA ROFEH HA IVRI THE HEBREW PHYSICIAN

VOL. 1 No. 1

Under the able editorial management of Dr. Moses Einhorn and Dr. Asher Goldenstein of New York, a new medical publication has made its initial appearance.

This is the only Hebrew Medical Journal published outside of Palestine. It contains articles on general medical topics and has a special section devoted to new Hebrew medical terminology and a medical bibliography dealing with contributions of distinct and particular ethnic interest to the Jewish race per se.

The medical Hebrew terminology deserves special consideration on account of its etymology or derivation. Three methods were adopted in order to bring it in accord with accepted usage and nomenclature or their proximal equivalents.

The first method pursued was perhaps the easiest and consists in the transliteration of Greek or Latin terms into Hebrew letters. The second method was to search for equivalents in the vast domain of Talmudic and Biblical literature, while the third method was to invent new terms, i. e. an artificial terminology or word coinage.

A glossary of new terms is appended to facilitate a better comprehension of the text for those who are not thoroughly familiar with the modern Hebrew nomenclature.

Two articles merit special attention, viz; one on Acute Haemorrhagic Pancreatitis ('Delek Tat kibith D'mamei harif) by Dr. A. Goldenstein, and the other on Pertussis (Kakath) by Dr. Paul Luttinger. In these two articles we may readily discern how terms were originated and adopted, how equivalents were formed and how therapeutic expressions were made to conform with accepted Latin and Greek sources.

This publication is a distinct and valuable departure in the field of experimental scientific terminology as well as a timely contribution to medical science.

One is eagerly awaiting subsequent issues, which according to the prospectus, will soon be out. It is hoped that such an undertaking will be crowned with the success it so richly deserves.

Dr. N. E. Arnstein.

RENE THEOPHILE HYACINTHE LAENNEC—A Memoir. Gerald B. Webb, M. D., President, Colorado School of Tuberculosis, Colorado Springs; U. S. Government Delegate to the Laennec Centenary, Paris, December, 1926; Thirteen full-page plates; Paul B. Hoeber, Inc., New York.

This little work of less than 150 pages is about as complete a biographical sketch of Laennec as we have seen in the English language. The author bases his work on the two volume biography of Laennec published by Alfred Rouxeau in 1912 and in 1920. The original work of course is in French. Dr. Webb's book deals in the usual way with birth and family, boyhood and school life,

the study of medicine with important chapters on the Stethoscope and on the "De L'Auscultation Mediate." The work is written in an entertaining readable style and is illustrated with engravings suitable to the volume. It is a fitting addition to the biographical studies which already bear the imprint of Paul B. Hoeber.

GRAVES' GYNECOLOGY—Octavo volume of 1016 pages, with 562 illustrations, 128 in colors. William P. Graves, M. D., Professor of Gynecology at Harvard Medical School. W. B. Saunders company, Philadelphia.

In reviewing the revised edition of Graves' Gynecology we unhesitatingly recommend it as one of the outstanding gynecologies of the day. Since its first appearance in 1916 three revisions have come from the press; the last has brought us about all of the recent progress in this specialty, particularly with reference to the physiology of menstruation and ovulation. The chapters on endocrinology and organotherapy are entirely rewritten and are perhaps more clearly comprehensive than like chapters in any other treatise. Entire new chapters appear on questions of cancer and its treatment by radium. The section on sterility has been entirely re-written and is fascinating. The W. B. Saunders Company have apparently spared nothing in the publication of this volume to make it attractive—the 561 illustrations, 128 of which are in color, serve in a splendid way to elucidate the author's meaning. Both author and publisher are to be congratulated on the appearance and character of this edition.—H. Wellington Yates.

THE EVOLUTION OF PREVENTIVE MEDICINE—Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P. Formerly Principal Medical Officer of the Local Government Board of England and Lecturer on Public Health Administration, School of Hygiene and Public Health, The Johns Hopkins University. The Williams and Wilkins company, Baltimore.

Since preventive medicine is coming more and more to the foreground, the story of its development is of increasing interest. The first half of the book is an interesting resume of medical history. The latter chapters deal with the development of our ideas of sanitation and definite prevention. The author's style is fascinating. Elsewhere in this number of the Journal appear sentences that illustrate the author's aphoristic style.

CALCIUM THERAPY—The fundamental principle underlying rational therapeutics. John Aulse, M.D.

The author deals in a very novel way with the treatment of disease by diet with special reference to calcium and calcium metabolism. He gives a brief survey of the literature and his experience with calcium medication with reference to the "laws of mass action," and its chemical interrelation with other body salts.

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In many cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.



## RESEARCH OF EPILEPSY URGED

A plea that each state provide research funds, so that the ancient, baffling disease of epilepsy may at last be effectively fought was made today by Dr. Robert L. Dixon, superintendent of the Michigan Farm Colony for Epileptics, before the American Psychiatric Association, meeting recently at Minneapolis.

There is no other disease with the prevalence of epilepsy about which doctors have so little positive knowledge, and about which they disagree so widely, Dr. Dixon declared. It is not even certain whether the conclusions are caused by a physical disorder or whether the malady has its origin in some psychic disturbance. The possibility that some infectious agent enters the body to cause the epileptic fits and personality traits has never been thoroughly investigated.

Research now conducted at the Michigan Farm Colony indicates that even before the convulsions set in, the first stages of the malady can be detected, and every attempt should be made, Dr. Dixon pointed out, to recognize and prevent epilepsy in this stage just as tuberculosis is now recognized and arrested.

Very large sums are spent by the states on epileptic patients, for little more than custodial care, Dr. Dixon pointed out. Institution staffs are so engaged with their regular work that they have little time for research, and the problem of epilepsy cannot be solved, he added, until research departments and laboratories are established at state institutions for epileptics, with separate workers who have the time and funds to conduct experiments and investigations.

No state has ever provided such a fund for a program of research in epilepsy. The Michigan legislature has been asked to establish such a research department, and Dr. Dixon expressed confidence that the next session of the Michigan legislature would provide adequately for epileptic research.—Science Service.

## OLDEST MEDICAL BOOK TRANSLATED INTO ENGLISH

Skilled surgeons in the valley of the Nile knew more about human anatomy than their descendants of the middle ages, thousands of years later.

This is one of the surprising facts revealed by the translation of the Edwin Smith Papyrus, the oldest scientific book in the world, which has been completed by Prof. James Henry Breasted, well known Egyptologist of the University of Chicago. The manuscript is now being printed for the New York History Society, the owner of the document, by the Oxford University Press, which is the only place at the present time that has the facilities for setting up the ancient hieroglyphics in type.

The papyrus is regarded as the most important document in the history of all science that has come down to us from the time before the ancient Greeks. It is remarkable in that it shows an amazing approach to the attitude of the present day scientist, in striking contrast to the long lists of mingled charms and recipes that constitute a large share of the medical papyri of ancient Egypt.

Some of the diagnoses and treatments of injuries set down by the author-surgeon of 1700 B. C. in his orderly arrangement of cases are surprisingly modern. He made the first observation that has survived that the brain is the center

of nervous control; he felt that the heart and brain played an important role in our physical makeup; and he knew something of pulse or pulsation and of the circulatory system.

He divided his diagnoses into three groups, according to the seriousness of the injuries: One, "an ailment which I will treat"; two, "an ailment I will contend with"; three, "an ailment not to be treated", meaning probably those beyond the reach of his skill.

Among the mechanical appliances which appear for the first time in medical literature in this papyrus include a kind of vegetable lint used to absorb blood, linen bandages manufactured for surgical use, adhesive plaster of linen, and surgical stitching of wounds. The most remarkable observation in the ancient manuscript, which was probably intended as a text book, is in connection with a case of compound fracture of the skull with no visible external contusions. The old Egyptian surgeon noted that both the eye and gait of his patient were altered on the same side of the body as that on which the head injury had occurred, one of the earliest known observations that injury of the brain may result in disturbance of normal control of various parts of the body.

—Science Service.

## FAD FOR LIVER MAY HARM WELL PERSONS

The fad of liver eating which has sent the price of this poor man's beefsteak up to eighty cents a pound may do harm to healthy individuals and deprive those pernicious anemia sufferers of this life-saving meat which they really need, the American Medical Association was warned in a program devoted to the latest reports upon the conquest of this hitherto hopeless disease. Dr. William S. Middleton, of Madison, Wis., reported that other types of anemia do not respond to the specific element in liver, although the Minot-Murphy diet, which includes liver, has been generally successful in treating secondary anemia.

Additional proof of the efficacy of liver in the treating of pernicious anemia was presented in a paper by Dr. James H. Means and Dr. Wyman Richardson, of Boston. In reviewing the treatment of this disease, Dr. Means made a suggestion as to its nature. It may be the result of a diet deficiency rather than a poison or infection. The fact that many people live on insufficient diets, and the discovery of a successful cure for pernicious anemia by means of predigested foods, indicate the primary cause may be a gastric defect.—Science Service.

It is marvellous that all the wisdom of the world is contained in a few aphorisms. Idleness is the parent of evil because it prevents the acquisition of skill which is the parent of creativeness. It is creation, not work, that makes life worth living. All children are destructive before they are curious. Later they destroy to satisfy their curiosity and not finding appeasement, they create. Then they get thrills and satisfactions they have never before experienced. By developing constructiveness they learn how to think, by enhancing it we teach them. Information promotes knowledge through observation and construction; knowledge itself is of no use to anyone, save the possessor, until it is transmuted into wisdom and then shared with others. The transmutation is accomplished by taking thought.

—From "The Doctor Looks at Love and Life." By Joseph Collins.